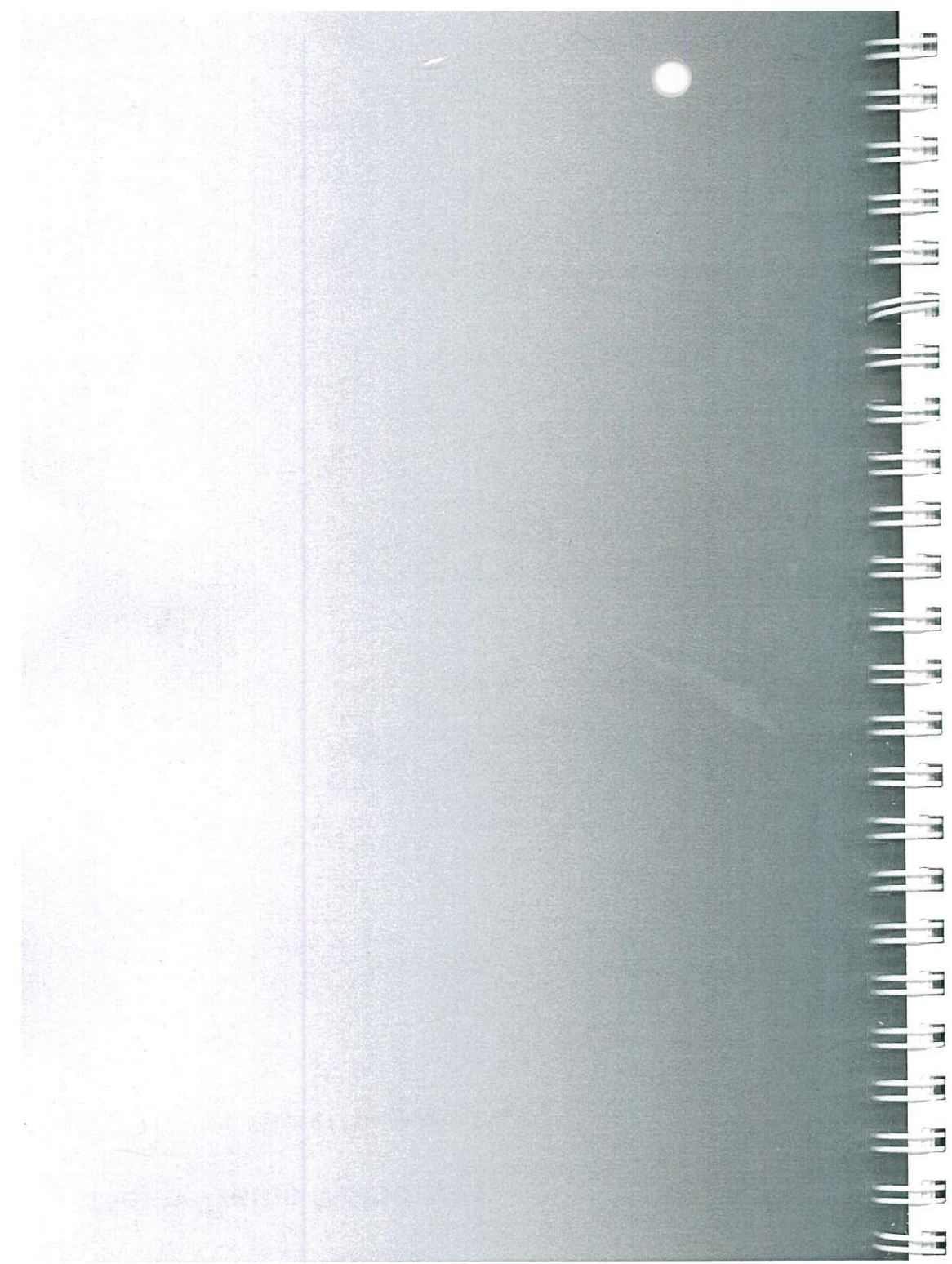


Metro Trains Melbourne

Stage 24

Continuation Training

Reference Notes

Metro Trains Melbourne

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Metro Trains Melbourne

Stage 24 Continuation Training

Session 1
Operational Issues

- New National Health Standards for Safety Critical Workers -(CAT 1 Drivers)
- Right time departure
- The equipment a Driver MUST carry
- Safety Alert – VICERS Isolation
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- Manual Handling / Wheelchair Ramp

SAFETY BULLETIN

MetroSafe
360 degrees, safety from every angle

Issued: 3 December 2012
Expiry: 31 March 2013
Number: HSEQ-BUL-106-2012

HEALTH ASSESSMENT FACT SHEET

Fact Sheet 1 – Changes in National Standard for Health Assessment Rail Safety Workers Sleep Disorders

Who is effected with the change	This change affects Category 1 or 2 health assessments that fall into a certain criteria.
What has changed	When you attend a full periodic Category 1 or Category 2 Rail medical you may require a referral for an at home sleep study test to check for possible sleep Apnoea • If your BMI is equal or greater than 40 or; • Your BMI is equal or greater than 35 and you have one of the following: o diabetes type 2 o high blood pressure requiring 2 or more medications for control o a history of loud snoring or witnessed apnoea events. o You score highly on the Epworth Sleepiness Scale questionnaire **Please note:** if you are required to attend a sleep study referral you will be deemed fit for duty subject to review and may continue normal work until the results of the test are received. When you attend a full periodic Category 1 or Category 2 Rail medical and have diabetes • If you have previously been diagnosed with Diabetes you may now be required to see a specialist under the requirements of the new standard, even if you are already managing it through your GP. • If you are managing your diabetes satisfactorily through diet or Glucose lowering agents with your GP then you will not need to see a specialist and will be fit for duty • If you are treating your diabetes with insulin you must get a report from a treating specialist to be cleared fit for duty. If assessments show your diabetes is not being managed well you may be marked temporarily unfit for duty and required to see a specialist • For newly diagnosed diabetics you will automatically be unfit for duty until seen by a specialist.

SAFETY BULLETIN

MetroSafe
360 degrees, safety from every angle

When does this come into effect?	The implementation date for the new National Standard for Health Assessments of Rail Safety Workers is 20th January 2012. Any periodic health assessments done after this date will be by the new standard.
How is BMI calculated	BMI is calculated using your body mass divided by your height squared. $BMI = \frac{\text{Mass (kg)}}{(\text{Height (m)})2}$ So for example: Someone who is 1.55 meters tall (5ft 10") and weighs 80kg has a BMI score of 25.8
What happens if I fail the sleep study test	If you fail the sleep study test you will be unfit for duty and will require further assessment and possibly treatment before being passed as fit for duty.
What should I do if my BMI is high	If you are worried about your BMI is above 35 we recommend you speak to your doctor.
More Information	For more information on BMI go to http://www.betterhealth.vic.gov.au and search BMI. For more information on Sleep Study Tests go to http://www.sleepservices.com.au/ For more information on the new standard go to www.ntc.gov.au Further communications will be released in the coming weeks.

NTC AUSTRALIA
National Transport Commission

Frequently asked questions

National Standard for Health Assessment of Rail Safety Workers October 2012

Q. Why is the Standard being updated?

As part of its reform maintenance program, the NTC led a review of the Standard to ensure it reflects current medical best practice and meets the practical needs of rail operators and rail safety workers. This will continue to improve rail safety outcomes by ensuring rail workers are medically fit for duty.

Q. What is the purpose of the Standard?

Under the National Rail Safety Law and as part of an integrated safety management system, rail transport operators are required to manage the risks to safety posed by the ill health of rail safety workers. The Standard provides practical guidance for rail transport operators to meet these obligations.

Q. Who uses the Standard?

The Standard provides guidance to rail operators on how to monitor the health of rail safety workers and applies to all government, commercial, tourist and heritage rail operators.

The Standard also contains medical criteria used by Authorised Health Professionals who are appointed by rail transport operators to perform health assessments of rail safety workers.

Q. Is the Standard compulsory?

Under the National Rail Safety Law scheduled to commence in January 2013, rail transport operators must have a health and fitness program for rail safety workers that complies with the Standard.

Q. When will the revised Standard come into effect?

The revised Standard will come into effect on 20 January 2013, in line with the National Rail Safety Law to underpin the National Rail Safety Regulator.

Q. What are the key changes to the Standard resulting from the review?

Latest medical knowledge and best practice

The Standard has been extensively revised, drawing on recent research and expert opinion on the impact that various chronic medical conditions have on fitness for rail safety work.

Enhanced useability

The two volumes of the previous edition of the Standard have been consolidated into one document to reduce repetition and enhance useability. The publication now also features a more logical flow of content - from risk assessment of rail safety tasks to application of the relevant health standards.

The new edition also features:

- a focus on the functional implications of various medical conditions, rather than the diagnosis
- improved general guidance on rail safety worker assessment and management
- flow charts to facilitate clinical decision making
- information about medico-legal responsibilities
- a comprehensive index.

More details about the key changes to specific chapters are described in the *Summary of Changes* document available from the NTC website at www.ntc.gov.au.

Q. Who has been involved in reviewing the Standard?

The NTC has led the review of the Standard in close consultation with relevant stakeholders.

The NTC received valuable feedback from a wide range of stakeholders during the review, including medical and other health professionals, consumer health organisations, government transport departments, rail operators, unions, and peak industry bodies. To assist with interpreting complex medical information, the NTC appointed *Project Health* as medical consultants to the project.

The NTC and Project Health explored feedback received by:

- further liaising with stakeholders, including health professional organisations, to better understand issues and ensure that the medical standards meet current best practice
- considering coroners' reports, various accident investigations and recent research
- bringing together a range of stakeholders in the project reference group, including medical professionals, regulators, rail operators, unions and peak industry bodies, to obtain overarching advice for the review.

A draft revised Standard and accompanying report were released for public comment in August 2011 before the final documents were approved by the Standing Council on Transport and Infrastructure, comprising state and territory transport, planning and infrastructure ministers in October 2012.

Q. How do you define a rail safety worker?

Rail safety workers are defined in the Standard as a worker undertaking rail safety work as described in relevant rail legislation. This can include an employee, contractor, subcontractor or volunteer performing work on a railway or tramway system.

More information about the definition of a rail safety worker can be found in the glossary section of the Standard, available from www.ntc.gov.au.

Q. What types of rail safety workers need to be assessed under the Standard?

The Standard guides operators to perform a 'risk assessment' of the impact of a rail safety workers' tasks on the safety of the rail network, other workers and the public.

Based on this assessment, workers are categorised according to the potential risks to safety associated with ill health, and health assessments are scheduled accordingly:

- **Category 1 Safety Critical Work/Workers.** Category 1 workers are the highest level of Safety Critical Worker. These are workers who require high levels of attentiveness to their task and for whom sudden incapacity or collapse (e.g. from a heart attack or blackout) may result in a serious incident affecting the public or the rail network. Driving a single-operator train on the commercial network is an example of a Category 1 task.
- **Category 2 Safety Critical Work/Workers.** Category 2 workers are those whose work also requires high levels of attentiveness, but for whom fail-safe mechanisms or the nature of their duties ensure sudden incapacity or collapse does not affect safety of the rail network. For example, in many cases signallers are classified as Category 2 because fail-safe signal control systems protect the safety of the network in case of worker incapacity.
- **Category 3 Non-safety critical worker.** Around the Track Personnel (ATTP) who operate in an environment where they may be at risk from moving rolling stock. They are classed as Category 3 and are required to have health assessments to identify relevant health risks.
- **Category 4 Non-safety critical worker.** ATTP who do not work around the track are not at risk from moving rolling stock and are not required to have health assessments under this Standard. They are classified as Category 4.
  ATTP who operate in a Controlled Environment are also classified as Category 4. A Controlled Environment is defined in the Standard as a rail workplace such as a siding, rail yard or workshop environment where a risk assessment has been performed to identify hazards and where controls are implemented to ensure that any person working in or transiting the area is at minimal risk from moving rolling stock.

Q. How often do rail safety workers have to be assessed?

For workers defined as category 1, 2 or 3, health assessments are performed during the recruitment process. After that, assessments are scheduled according to the worker's category and age:

Category 1 and 2 (those workers defined as 'safety critical')

At the time of commencing employment, then:

- every 5 years to age 50, then
- every 2 years to age 60, then
- every year.

Category 3: Around the Track Personnel in an Uncontrolled Environment (workers who undertake duties around the railway track in areas where they are at risk of exposure to moving rolling stock)

At the time of commencing employment, then:

- at 40 years of age, then
- every 5 years.

In any case, category 1 and 2 workers must have a health assessment conducted within 2 years after turning 50 years old, and within one year after turning 60 years old.

Health assessments may also be triggered at any time by incidents or concerns regarding the worker's ability to perform their job safely.

Q. What type of health conditions might affect a rail safety worker's ability to work safely?

Rail safety work can involve tasks which, through action or inaction on the part of the worker, could lead directly to a serious incident affecting the public or the rail network.
The rail transport operator has a legal responsibility under the relevant rail safety legislation to ensure systems are in place to protect the safety of the public and the network. This includes a responsibility to ensure the health and fitness of workers is monitored and does not jeopardise rail safety.

Rail safety work can involve complex tasks requiring perception, good judgment, responsiveness and reasonable physical capability. A range of medical conditions, as well as treatments, may therefore impair fitness to work.

Common examples include:

- Blackouts
- Cardiovascular conditions
- Diabetes
- Dementia and cognitive impairment
- Seizures and epilepsy
- Other neurological conditions
- Musculoskeletal conditions
- Psychiatric conditions
- Sleep disorders
- Alcohol and other substance misuse
- Vision and eye disorders.

Q. What are the legal and ethical responsibilities of health professionals, rail safety workers and employers?

The Standard clearly outlines the responsibilities of rail operators, medical professionals and rail safety workers.

The rail transport operator has a legal responsibility under the relevant rail safety legislation to ensure systems are in place to protect the safety of the public and the network. This includes a responsibility to ensure the health and fitness of workers is monitored and does not jeopardise rail safety.

Rail safety workers have a duty of care to themselves and others. Once employed, they should understand the implications of their role on the safety of the public and network, and the importance of their health and fitness to rail safety.

They have a responsibility to notify the employer of any temporary or ongoing health condition or change in health status that is likely to affect their ability to perform their work safely. They must also provide complete and accurate information concerning their medical history to the assessing Authorised Health Professional, as well as comply with any review requirements of a health assessment.

Health professionals appointed and authorised by the rail transport operator to conduct health assessments for rail safety work should have demonstrated that they have relevant knowledge and understanding of the rail environment, the associated risks and the requirements of the Standard. The Standard outlines the knowledge and experience necessary to conduct worker assessments.

Authorised Health Professionals should conduct health assessments in line with the procedures contained in the Standard.

The relationship between the health professional and the worker/patient is governed by the ethics of the relevant health profession and by privacy laws.

Q. How will the revised Standard affect health professionals' practice?

Rail safety worker health assessments are performed by Authorised Health Professionals selected by a rail transport operator on the basis of their compliance with the specified selection criteria outlined in the Standard.

The clarity of the revised Standard facilitates assessment of fitness to work by Authorised Health Professionals and ensures greater consistency in such assessments. It is not anticipated that the revised Standard will impact on health professionals' workload in undertaking assessments.

Q. How will the revised Standard affect rail operators?

The revised Standard will allow operators to manage the health of their workers with the latest medical knowledge and best practice. Most changes made in the revised Standard provide greater clarity around rail operators' assessment and management of workers, and the relationships between rail operators and rail safety workers.

Q. How will the revised Standard affect rail safety workers?

The revised Standard reflects developments in medical science and improvements in diagnosis and treatment of various health conditions. It therefore provides scope for workers with well-managed health conditions to continue to drive safely.
There are a small number of important changes that will affect rail safety workers. These are summarised in the 'Summary of Changes' document in this kit or available on the NTC website at www.ntc.gov.au.

Q. Who will receive a hard copy of the revised Standard?

The NTC will provide a limited number of hard copies of the Standard to rail regulator offices, Australian rail transport operators and authorised health professionals.

An electronic version will be available to download from the NTC website at www.ntc.gov.au.

Q. Where can I find out more information?

For further information or to download a copy of the Standard, visit the NTC website at www.ntc.gov.au

Summary of changes

National Standard for Health Assessment of Rail Safety Workers October 2012

National Standard for Health Assessment of Rail Safety Workers October 2012

Changes to the medical standards – by chapter

Please note: *This summary is intended as a guide only. For comprehensive information and the full medical criteria, please consult the full publication, the* National Standard for Health Assessment of Rail Safety Workers 2012 *available from* www.ntc.gov.au.

Blackouts

A new blackouts chapter summarises the various causes of 'blackout' and directs users to the relevant section as appropriate (e.g. epilepsy, diabetes, cardiovascular, neurology). A flow chart aids management of cases.

The revised standards table includes criteria for blackouts of undetermined origin (estimated to be a small number of cases). Based on expert advice, these workers are now managed as for those experiencing a seizure. This means a five-year non-working blackout-free period (previously six months) before being eligible for Fit for Duty Subject to Review.

Cardiovascular

There are a number of changes to non-working periods that may impact on rail safety workers. For example:

- The non-working period after an acute myocardial infarction has been reduced from three months to four weeks.
- The minimum non-working period following cardiac arrest has now been set at six months, where it was previously left to the discretion of the treating specialist.

The inclusion of the age adjustment regarding the Bruce protocol treadmill stress test will lead to fairer assessment of older drivers. Under the revised Standard a treadmill test result has validity for two years, which will lessen unnecessary testing.

The clarification that only very high blood pressure has implications for fitness for duty will assist doctors in advising the many patients who have more moderate blood pressure and hence lessen their patients' concerns about fitness for duty.

Diabetes

Hypoglycaemia (low blood sugar) is the main safety risk for workers with diabetes. In the revised Standard, there is an increased focus on severe hypoglycaemic events and lack of hypoglycaemic awareness as particular risks to safety.

A minimum six-week non-working period has been introduced for Safety Critical Workers who have experienced a severe hypoglycaemic event. A 'severe hypoglycaemic event' is defined in the Standard as an event of hypoglycaemia of sufficient severity such that the person is unable to treat the hypoglycaemia themselves and thus requires an outside party to administer treatment.

The revised Standard provides improved guidance for Authorised Health Professionals including a flow chart to assist management of the different types of diabetes and clarification as to what constitutes good control of diabetes.

The Standard has been modified so that the treating general practitioner (rather than a specialist) may provide the report for a worker's periodic health assessment if the worker is being treated with metformin or sulphonyl ureas alone. Telehealth technologies may also be used to assist review of drivers in rural Australia and lessen the inconvenience of attending a regional centre.

Neurological conditions

The various aspects of neurology have been combined into one chapter. This includes the section on brain tumours (previously included in the cancer chapter, and which is now part of the standard relating to space-occupying lesions), dementia, seizures and epilepsy, vestibular disorders and other neurological conditions.

Epilepsy

The new standards introduce a 'default standard' which identifies a default non-working seizure-free period of 10 years for Category 1 rail safety workers who have suffered one or more seizures. However, depending on the type of epilepsy and seizures being experienced, these workers may be eligible for a reduction in those restrictions, for example, for a first seizure. In addition to the reductions in restrictions for particular seizure types, there is also an allowance for 'exceptional cases' which do not fit the usual criteria, at the recommendation of the treating specialist.

Category 2 workers are to be managed on an individual basis comprising a risk assessment of their job in consultation with a neurologist. Similar to the criteria for category 1, some flexibility in non-working periods is allowed regarding 'safe seizures' and sleep-only seizures.

Other neurological conditions

Notable changes include:

- waiving of the requirement for periodic review for stable conditions such as cerebral palsy
- inclusion of a specific standard for subarachnoid haemorrhage
- improved guidance on the management of head injury and intracranial surgery
- a new standard encompassing 'other neurological conditions' that may not be specified in the standard.

Psychiatric conditions

The treatment of psychiatric conditions in the Standard is largely modelled on the revised equivalent chapter of *Assessing Fitness to Drive*, which has undergone significant revision to ensure greater clarity around the impacts of mental illness on driving ability and how these impacts can be assessed and managed.

The content is aligned with that in other chapters relating to conditions that impact on cognition, perception and behaviour, so as to support a more consistent approach throughout the publication. The emphasis on severe functional impairment—not simply on a diagnosis or treatment for a psychiatric condition—will be fairer to the many patients with mild to moderate conditions.

Guidance regarding the specific impacts of various psychiatric conditions on driving ability has been included, comprising the impacts of schizophrenia, bipolar disorder, depression, anxiety disorders and personality disorders, as well as the impacts of medication.

A section on post-traumatic stress disorder (PTSD) has also been added in view of suicides on railways. It is intended that this will cross-link to programs for critical event management.

A section on adult attention deficit hyperactivity disorder (ADHD) has been added in view of increased recognition of this condition and its relevance to safe working.

Sleep disorders

The Standard introduces objective markers of possible sleep apnoea, rather than relying on the completion of a worker questionnaire, as was the case with the previous edition of the Standard.

The objective markers of possible sleep apnoea include body mass index, the presence of type 2 diabetes and unstable high blood pressure. A flow chart has been included to make clear to users the process by which a person should be assessed and referred for further testing of sleep disorders.

Substance misuse

The revised standards include a new chapter which combines drug and alcohol misuse. It focuses on drug and alcohol dependence, highlighting the key assessment and management considerations.

The specific medical criteria relating to substance misuse have been revised to provide greater clarity for examining health professionals and to support consistent management.

This includes:

- focusing on functional cognitive effects rather than the dependency states themselves
- introducing a non-working period linked to a defined period of 'remission' as a requirement for consideration of conditional fitness for duty (Fit for Duty Subject to Review). Remission is defined as abstinence or where the substance use has reduced in frequency to the point where it is unlikely to cause impairment.

Hearing

The practical (field) tests have been removed from the Standard in favour of a standardised speech in noise/quiet test. This ensures the test can be applied uniformly throughout Australia, ensuring consistency of results and safety.
The Standard has been reviewed to provide greater clarity around the use of hearing aids and ensure that people with hearing aids were not unfairly precluded from safety work.

The proposed Standard, while not precluding the use of hearing aids, does require that the aids:

- suppress feedback
- be noise limited to 80 decibels
- have no noise cancellation feature and
- have no directional microphones.

Vision and eye disorders

Colour vision

The new Standard incorporates several changes to the assessment for colour vision. The risk assessment of rail tasks, regarding their need or otherwise for accurate colour vision, has been enhanced and a new flow chart developed to assist operators.

The Standard has removed the practical field test recommended in the previous edition in favour of the RailCorp Lantern. The RailCorp Lantern is a simulation of modern LED railway signals that permits people with a colour vision deficiency to be tested in a consistent manner on a simulation of the actual lights they are required to identify in the workplace. This clinic-based test can be applied uniformly throughout Australia, ensuring consistency of results and safety.

Visual acuity

Feedback identified that the acuity (or ability to see fine detail) standard can be complex to understand by those without medical training, and creates confusion for rail operators. The section on assessing visual acuity has therefore been clarified with the addition of a flow chart.

Monocularity

The Royal Australian and New Zealand College of Ophthalmology (RANZCO) has recommended a stricter approach for those with monocularity (or one-eye), particularly for commercial vehicle drivers (and, by extrapolation, Safety Critical Workers). This is due to loss of field and loss of depth perception. This has resulted in an addition to the Standard specifically covering monocular drivers.

Monocular train drivers and others do not meet the criteria for fitness for duty. They need to have fields of 140° or be assessed on an individual basis by an ophthalmologist or optometrist in conjunction with a risk assessment of the job by an occupational physician. Where Fit for Duty Subject to Review is granted, the health of the remaining eye must be assessed on an annual basis.

Musculoskeletal conditions

The revised Standard emphasises the functional aspects of musculoskeletal conditions in contrast to the anatomical–pathological approach used previously. This includes reference to sensory, balance, coordination and mobility, as well as insight. This has resulted in significant redevelopment of the chapter, including improved guidance regarding assessment considerations and the requirements of the task.

The Standard has been amended to give more detailed advice on the design and conduct of functional (non-workplace-based) and practical (workplace-based) assessments for musculoskeletal conditions. It emphasises that such assessments should supplement and inform the clinical assessment, not replace it.

Feedback recommended that workers who have conditions which are static, such as congenital conditions, should require medical assessment for the initial fitness for duty assessment, but more frequent review (other than normal periodic review) should not be required.

For further information:

For comprehensive information on health assessments, including the full medical criteria, please consult the full publication, the *National Standard for Health Assessment of Rail Safety Workers 2012*, available from: www.ntc.gov.au.

Drivers Please Note:

Commencing immediately, Drivers are not to check destination indicators by exiting the cab to view the front of the train after relieving at the same end. The DDU must be checked after the TDN is inserted and if it shows the correct destination, then the destination indicator may be assumed to be correct.

This does not apply when changing ends, relieving at the opposite end, or to Hitachi trains. Marker lights and destination indicators must continue to be checked in these circumstances.

The decision for this has been taken to focus concentration on the train departure procedure and to assist with right time departure during busy periods.

Best Regards

Perry Ramsey

Manager Train Service Delivery

METRO	FSS LED Digital Clocks & Train Departure	Document No. TSD-069
Approved Manager Train Service Delivery	Version: 1	Page 1 of 1

Drivers Please Note:



To assist in right time departure from Flinders St, LED Digital Clocks with white LEDs have been installed at both East & West ends of all platforms.

The LEDs have been set to 5% brightness during darkness and 10% brightness during daylight, so as to not interfere with sighting of signals or other platform infrastructure.

These clocks will be progressively switched on during this week.

Drivers are reminded that 15 seconds prior to departure time, check that the applicable signal is at a proceed aspect and commence the door close sequence, if safe to do so. This is to help achieve 00 right time departure.

In addition, commencing immediately, Driver changeover is now limited to 1 minute, in line with the 2012 - 2015 Enterprise Agreement.

Thanks

Brett Meyers

Group Train Driver Manager, Caulfield Group

METRO	PLATFORM DEPARTURE	
L2-TSD-PRO-014	Version: 1	Effective from: 24th April 2013

Approval

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Document Endorsers	Robert Guest	Head of Customer Service	
	Paul Crisp	Train Driver Manager, Head of Safety & Standards	
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Amendment Record

Approval Date	Version	Description
24/04/2013	1	First issue Metro. This version supersedes: • cml-8.13-tsg-099 – Right Time Departure of Trains • MO 03 Departure of Trains from Stations • n-6.1-wi-07 - Right Time Departure of Trains • PO 18/95 Reporting Procedure for Defective SPOT Infrastructure • SPOT 9/94 SPOT Infrastructure for Viewing Trains at Platforms • TC-6 Safety of Customers Boarding and Alighting Trains Please dispose of all copies. This version introduces: • Commencement of departure procedure 15 seconds prior to departure time at terminal stations This version removes: • The requirement for an ALL RIGHT hand signal at Greensborough

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METRO	PLATFORM DEPARTURE	
L2-TSD-PRO-014	Version: 1	Effective from: 24th April 2013

1. Purpose

This procedure describes methods to safely depart EMU trains from platforms at the correct departure time.

2. Scope

It deals with the responsibility for right time departure, and Driver procedures when platform departure viewing infrastructure cannot be used.

It does not detail dispatch paddle departure, which is dealt with in related procedures.

3. Abbreviations and Acronyms

- CCTV Closed Circuit Television

4. Definitions and Responsibilities

- Train Drivers and Trainee Train Drivers
- Station staff
- Centre the Reverser Ensure the reverser or selector switch is not in direction

5. Safety Considerations

5.1 SPAD Prevention

5.1.1 When a signal located at or near the departure end of a platform displays STOP, Drivers **centre the reverser** until the signal displays a proceed aspect.

5.1.2 ALWAYS **centre the reverser** after arriving at signals at STOP, either at a platform or mid-section.

5.1.3 Before departing, always remember to check your **STDS:**

- **S**IGNAL Check signal is displaying a proceed aspect
- **T**IME Check departure time
- **D**EPARTURE Carry out departure sequence
- **S**ECOND LOOK Take a second look at signal

5.2 Door Closed Light Steady

Immediately prior to requesting traction power and releasing the brake, the Driver must ensure that the doors closed light steadies, and then recheck the train to ensure that passengers and articles are clear of saloon doors.

5.3 Doors not to be Released Again

Once saloon doors have been closed for departure, the train must not be further delayed unless a dangerous or emergency situation arises. Doors must not be again released for late arriving passengers.

5.4 Cab Unattended Procedure

The work instruction *Cab Unattended Procedure* must be complied with any time the Driver leaves the cab under this procedure.

6. Platform Departure Infrastructure

6.1 Stopping Marks

6.1.1 Stopping marks are provided on all platforms to show where the entire train is safely on the platform, and the Driver is in the correct position to view platform departure infrastructure for safe departure. Once this mark is reached or passed, saloon doors may be released on the platform side.

6.1.2 Stopping marks consist of a painted rectangle on the platform surface and a blue cat's eye on the coping face at the 6 car and, where required, 3 car stopping locations.

6.1.3 Platform stopping marks are:

- White for DOWN trains.
- Yellow for UP trains.

6.2 Departure Indicator Lights

6.2.1 At some locations where platform departure viewing infrastructure is not provided and a clear view of the entire train is not available, departure indicator lights are provided for station staff to indicate to the Driver that the fixed signal is at PROCEED, customer requirements are complete and it is time for the train to depart.

6.2.2 Departure indicator lights consist of two vertical white lights. Two lights are provided in case one light fails. If one light fails, the indicator is to be still regarded as operational.

6.2.3 Departure indicator lights have three modes:

OFF

- No indication, train is not ready to depart

ON STEADY

- Indicates to the Driver that the fixed signal is at PROCEED, customer requirements are complete and it is time for the train to depart

FLASHING ON AND OFF

- Indicates that the Driver must make an emergency stop

6.2.4 Repeater departure indicator lights are also provided at some locations where the view of the first departure indicator light may be lost as the train leaves the platform.

6.3 Departure Viewing Infrastructure

6.3.1 At some locations where the Driver has insufficient view for safe platform departure, CCTV monitors and/or platform mirrors are provided.

6.3.2 For identification purposes, multiple CCTV monitors are described as follows:

- Top left hand
- Top right hand
- Bottom left hand
- Bottom right hand

6.3.3 Train mounted rear vision mirrors are also an important part of departure viewing infrastructure.

METRO	PLATFORM DEPARTURE	
L2-TSD-PRO-014	Version: 1	Effective from: 24th April 2013

6.4 Digital Clocks

6.5 Digital clocks are provided on all platforms at Flinders Street (excepting Platform 14) to enable the Driver to view both the train and the time in readiness for departure.

6.6 In the event that a digital clock at Flinders Street is inoperative (and at other locations), the Driver will utilise the issued wristwatch.

6.7 At Flinders Street and terminal stations the departure procedure is to be commenced fifteen seconds prior to scheduled departure time to enable doors closed and train movement at 00.

7. Departing all Platforms Except as in Section 8

7.1 Drivers are responsible for the right time departure of trains from all platforms except for Platform 14 Flinders Street, Showgrounds (UP trains only) and Flemington Racecourse.

7.2 The absence of announcements must not allow the train to be delayed, and the Driver must depart as scheduled.

7.3 Driver Right Time Departure Procedure

7.3.1 At **all locations** except as in Section 8, the Driver must:

7.3.1.1 Check that the departure signal (where provided) is displaying a proceed aspect. If not, **centre the reverser.** If there is no obvious reason for the delay, contact the controlling Signaller or the Area Controller, Metrol.

7.3.1.2 Look along the length of the train, using departure viewing infrastructure and train mounted mirrors, checking there is no other signal to stop or hold the train, for example, STOP hand signal.

7.3.1.3 Close the saloon doors when safe to do so, if no passengers are entraining or detraining.

7.3.1.4 Immediately prior to requesting traction power and releasing the brake, ensure that the doors closed light steadies.

7.3.1.5 Recheck that the departure signal (where provided) is displaying a proceed aspect.

7.3.1.6 Recheck the train to ensure that passengers and articles are clear of saloon doors.

7.3.1.7 Sound a long whistle and depart.

7.3.1.8 As the train departs the platform the Driver must again look back along the train, as far as practicable, for any hand signals or dangerous situation that may arise.

8. Departing Flinders Street Platform 14, Showgrounds (Up Trains) & Flemington Racecourse Platforms

8.1 Station Staff Procedure

8.1.1 Station staff are responsible for the right time departure of trains from Platform 14 Flinders Street, Showgrounds platform (Up trains) and Flemington Racecourse platforms, by operation of departure indicator lights.

8.1.2 15 seconds prior to scheduled departure time station staff must:

8.1.2.1 Check that the departure Home signal or signal status light, if provided, is displaying a proceed aspect in readiness for the train to depart.

8.1.2.2 Ensure that it is safe to close saloon doors.

8.1.2.3 Ensure that appropriate announcements for departure are made.

8.1.2.4 Activate the departure indicator light to ON STEADY. The departure indicator light and Repeater Indicator Lights (if provided) must remain ON STEADY until the leading carriage of the train has passed it.

8.1.3 In the event of an emergency arising where it is necessary to stop the departing train, station staff must switch the departure indicator light to the FLASHING mode until the train has come to a stand.

8.1.4 When it is again safe to close saloon doors, the procedures of clause 8.1.2 must again be carried out.

8.1.5 If the front of the train stops beyond the departure indicator light (or repeater departure indicator light, if provided), station staff must again carry out the procedures of 8.1.2 and give the Driver the ALL RIGHT hand signal from the departure end of the platform.

8.1.6 If the departure indicator light is not functioning, station staff must give the Driver the ALL RIGHT hand signal from a prominent position at the front of the train instead.

8.2 Driver Procedure

8.2.1 When the departure indicator light displays a steady illumination:

8.2.1.1 Check that the departure Home signal is displaying a proceed aspect. If it is not, the Driver must **centre the reverser.**

8.2.1.2 Look back along the train, as far as practicable, for any hand signals or dangerous situation that may arise.

8.2.1.3 Close saloon doors.

8.2.1.4 Immediately prior to requesting power and releasing the brake, ensure that the doors closed light steadies.

8.2.1.5 Recheck that the departure Home signal is displaying a proceed aspect.

8.2.1.6 Sound a long whistle and depart the train.

8.2.1.7 The absence of departure announcements must not allow the train to be delayed.

8.2.2 While departing the platform, the Driver must continue to observe the departure indicator light until the front of the train passes it, and be prepared to stop if it reverts to the FLASHING mode (or extinguishes).

8.2.3 If a train has been stopped in this manner, when it is again safe to close saloon doors, the procedures of Sections 8.1 and 8.2 again apply.

8.2.3.1 If the front of the train stops beyond the departure indicator light (or repeater departure indicator light, if provided), station staff must again carry out the Section of 8.1 and give the Driver the ALL RIGHT hand signal from the departure end of the platform.

METRO	PLATFORM DEPARTURE	
L2-TSD-PRO-014	Version: 1	Effective from: 24th April 2013

9. Terminating Short of Destination & Connecting with Bus or Train During Occupation or Disruption

9.1 If the train is scheduled to connect with an arriving bus or train, station staff must monitor the arrival and, if necessary, hold the train for the connecting service.

9.2 Station staff must give the Driver a STOP hand signal and advise the Driver of the reason for the delay.

9.3 In this situation, station staff must constantly monitor the arrival of the connecting service and give the Driver the ALL RIGHT hand signal when passenger requirements are complete and it is safe to close saloon doors.

9.4 The Driver must then carry out the procedure in Sections 7, or 8 (as applicable) of this instruction.

9.5 Station staff must confer with the Train Controller, Metrol whenever a train is expected to be delayed for a connection.

10. Departure Viewing Infrastructure not Viewable

10.1 Platform Infrastructure

10.1.1 If, after coming to a stand at a platform, it is found that for whatever reason a clear view of the train cannot be obtained the Driver must:

10.1.1.1 Go to a position, by leaving the cab if necessary, where customers entraining or detraining can be clearly observed. This includes by use of any operational platform departure infrastructure.

10.1.1.2 When the departure signal, if provided, is at a proceed aspect and customer requirements are complete, close the saloon doors using the most suitable door close button. This includes in trailing motors or van area door close buttons, if necessary.

10.1.1.3 Recheck the train to ensure that customers and articles are clear of saloon doors.

10.1.1.4 Return to the leading cab (if not there already) recheck the departure signal and again observe the platform, using the train mounted mirrors as far as practicable, to reconfirm it is safe to depart the train.

10.1.1.5 After ensuring the doors closed light is steady, sound a long whistle, and then depart.

10.1.1.6 As the train departs the platform again look back along the train, as far as practicable, for any hand signals or dangerous situation that may arise.

10.1.1.7 Report to the Train Controller, Metrol any late running over three minutes incurred.

10.2 Train Mounted Mirrors

If, after coming to a stand at a platform it is found that a clear view of the train cannot be obtained due to a train mounted mirror being defective, damaged, or obscured the Driver must carry out the procedure in paragraphs 10.1.1.1 to 10.1.1.7 of this procedure.

10.3 Reporting Defective Platform Departure Infrastructure

10.3.1 Defective, damaged or vandalised platform departure infrastructure must immediately be reported to the Train Controller, Metrol.

10.3.2 Details to be given are:

- Station name.
- Platform, for example:
  - Up, Down, centre, number 3, etc.
- Position on platform, for example:
  - Up end, Down end, 3 car mark, 6 car mark, etc.
- Infrastructure defective, for example:
  - CCTV monitor top left inoperative, obscured, out of focus, etc
  - Mirror fogged, graffiti, etc
  - Cat's eye missing

10.4 Flinders Street – Departure Infrastructure Failure

In the event of a failure of platform departure infrastructure, or where a clear view cannot be obtained, the Driver must immediately advise the Train Controller, Metrol who will arrange for station staff who will, from the centre of the platform, give the Driver the ALL RIGHT hand signal or use the despatch paddle when safe to close saloon doors.

11. Records and Enquiry

Item	Retained by	Period of Retention
Development Folder	Train Driver Standards Officer	3 years
Obsolete master copies	Train Driver Standards Officer	6 years
Distribution lists	Train Driver Standards Officer	3 years

Enquiries about this document are to be directed to Train Driver Standards Officer TSD.

12. Related Documents

- L2-STO-PRO-011 Dispatch Paddle Procedure at Suburban Stations
- L2-STO-PRO-012 Dispatch Paddle Procedure at Richmond & City Loop Stations
- L2-STO-PRO-013 Dispatch Paddle Procedure at Flinders Street Station
- L3-TSD-PRO-017 Cab Unattended Procedure

Equipment a Driver must carry

When on duty, Drivers must have in their possession the following items:

- Train radio with fully charged battery
- Issued mobile telephone
- Safety vest
- Controller key/Siemens Master key
- Tri-key
- 5P, V29P, 28P keys
- X'Trapolis park brake key
- VICERS and Protec2 keys
- Pen
- Prescription glasses, if applicable
- Roster book and any daily roster alterations (slips)
- Train malfunction message book
- Centre motor fault stickers and FWN Reduced Speed Stickers
- 15 Driver's Relief Authorities and 15 Train Authorities
- Track Access Forms
- Watch
- Torch

SAFETY ALERT

MetroSafe

Issued: 22 January 2013
Expiry: 22 April 2013
Number: TSD-ALRT-02-2013

VICERS ISOLATION

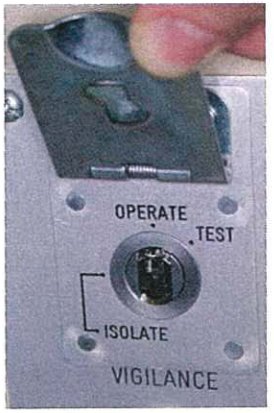
The VICERS system is being isolated contrary to work instructions.

VICERS is a safety system installed to ensure Driver vigilance and as an extra layer of protection for staff and customers should the Driver become incapacitated.

All Drivers are now trained in VICERS and the system **must not be isolated unless there is a fault. All faults must be reported under the FMP.**

If the VICERS fault light is illuminated in the absence of a TMM, this must also be reported under the FMP.

VICERS records the time of isolation and the FMP menu records time of reporting.



A Driver isolating VICERS without reason or without reporting the isolation will face disciplinary action.

Please be mindful that VICERS rollout is not complete, and is currently operational on:

- 90% of the Comeng fleet
- 30% of the X'Trapolis fleet

Authorised by

Perry Ramsey
Manager Train Service Delivery

The Responsible Manager is to determine the following:

Which areas are to be notified of this Safety Alert?

Please 'x'	Code	Division/Department
	MTM	Entire MTM Network
	CEO	Chief Executive Officer
	CCO	Corporate Counsel (Legal)
	CHE	Chief Engineer
	COM	Commercial
	CPO	Procurement
	COR	Corporate Relations
	FIN	Finance
	ICT	Information Communication & Technology
	HMR	Human Resources
	L&D	Learning & Development
	INF	Infrastructure
	ELN	Electrical Networks
	OCS	Operational Control Systems
	SIG	Signals
	STF	Structures & Facilities
	TRK	Track Management
	NAM	Network Asset Management
	AMS	Asset Management
	NPD	Network Planning & Development
	OPS	Current Operations
X	TSD	Train Service Delivery
	SWS	Safeworking
	NOS	Network Operations
	SER	Network Control
	PRJ	Projects
	ROS	Rolling Stock
	SQE	Health, Safety, Environment & Quality
	Other (e.g. Contractors, ARO):	

How should this Safety Alert be distributed and/or acknowledged?
Nb. This section may be amended by the Division dependent on best method of distribution.

Please 'x'	Method
X	Issued via email
X	Placed on Safety Noticeboards at the locations above
X	Placed in staff pigeon holes / letterboxes
	Delivered during toolbox discussions
	Employees to acknowledge receipt
	L4-SQE-FOR-070 Safety Alert/Safety Bulletin Register
	Toolbox Attendance Records
	Other (specify):
	Weekly Operational Notice

METRO	Changes to Driver Allocation Officer Structure	Document No. TSD-072
Approved Manager Train Service Delivery	Version: 1	Page 1 of 2

Train Service Delivery Staff Please Note:

Changes to the DAO structure will be introduced on the 27th January 2013. This is to help relieve congestion and enable better distribution of workload amongst the various DAO roles. To facilitate these changes, lines of communication have been altered to better align with the Train Controllers, Metrol and we have established a new DAO position of **MANPOWER DAO** to concentrate on Driver allocation.

Commencing 05:30 Sunday 27th January 2013, the following changes will apply:

Northern, Cross City & Caulfield Groups DAO (NCCDAO)

- 24 hrs 7 days
- Ext **57592**, **57596** & **57597**
- Primary function to communicate with Train & Fleet Controllers and Drivers on the NTH/CCY/CFD groups

Burnley & Clifton Hill Groups DAO (BCDAO)

- 24 hrs 7 days
- Ext **57634**, **57614** & **57550**
- Primary function to communicate with Train & Fleet Controllers and Drivers on the BLY/CHL groups

Note: To avoid congestion, when operating on these groups please ensure your enquiries are directed to the relevant DAO. For example, if driving a GWY train contact the BLY & CHL DAO (BCDAO), a CGB train contact the NTH/CCY/CFD DAO (NCCDAO) and so on.

Manpower DAO (new position)

- 05:30 - 21:30 7 days
- Ext **57545** & **57552**
- Primary functions are allocation of Driver resources, receive information from BCDAO & NCCDAO and act accordingly to maintain train service delivery
- May communicate with Fleet & Train Controllers via PBAX (no SEPAC)

Note: 21:30 to 05:30 the BCDAO, will take over Manpower DAO functions, and subsequently calls to 57545 & 57552 will be forwarded to the BCDAO.

DAO Assist (remaining unchanged)

- 07:00 - 23:00 M-F
- Ext **57548**
- Primary function to provide support for the DAO team as required

Sign On DAO (remaining unchanged)

- 03:00 - 19:00 M-F, 05:00 - 21:00 Sat & 06:00 - 21:45 Sun
- Ext **57631**, **57632** & **57674**
- Primary function to monitor Driver sign on

Note: Drivers are to utilise the Sign On DAO 57631, 57632 or 57674 for reporting absence and for general slip and roster enquires during the Sign On DAO operating hours.

Roster Supervisor

- DAO support during the AM & PM Peaks, 07:00 - 09:00 & 16:00 - 18:00 M-F
- Direct communication to Senior Network Controller Metrol via a dedicated PBAX Ext and cordless handset. **This may leave the forward planning desk 57595 unattended during this time.**

The new DAO board set-up is designed to evenly distribute the workload and relieve congestion, to enable DAOs to continue to play a crucial part in the delivery of the train service and provide an optimum service to Drivers. We ask for your patience and cooperation whilst we introduce these changes.

Best Regards

Ali Elbouch

Group Train Driver Manager, Burnley & Clifton Hill Groups

Metro Trains Melbourne

Stage 24 Continuation Training

Session 2 Procedures

- Route Knowledge Procedure
- Cab Travel Authority Procedure
- Section 3 Rule 1 Compliance Management Procedure

METRO	ROUTE KNOWLEDGE ANALYSIS & TRAINING PROCEDURE	
L2-TSD-PRO-017	Version: 1	Effective from: 1st October 2012

Approval

	Name	Position	Signature
Document Author	Justin Rulton	Train Services Officer – Principal Driver Specialist	
Document Endorsers	Paul Crisp	Train Driver Manager – Head of Safety & Standards	
	Stuart Fraser	Driver Training & Simulation Manager	
Approving Manager	Perry Ramsey	Manager Train Service Delivery	

Amendment Record

Approval Date	Version	Description
01/10/2012	1	First issue

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1. Purpose

This procedure provides a methodology to analyse the hazards associated with driving trains on a particular route. This analysis will then be used to calculate the length and type of training needed to qualify different Driver Levels in the route.

2. Scope

This procedure applies to all employees who are authorised to drive Metro Trains.

3. Abbreviations and Acronyms

- DTDM — Depot Train Driver Manager
- DTSM — Driver Training & Simulation Manager
- OJT — On-Job Trainer
- TDM-HSS — Train Driver Manager – Head of Safety & Standards (Performance Safety Manager)
- TSO-DTS — Train Services Officer – Driver Training Specialists
- TSO-PDS — Train Services Officer – Principal Driver Specialist

4. Responsibilities

- Depot Train Driver Managers
- On Job Trainers
- Train Driver Manager – Head of Safety & Standards
- Train Drivers and Trainee Drivers
- Train Services Officer – Principal Driver Specialist
- Train Services Officer – Driver Training Specialist

5. Definitions of Driver Levels

Table 1 Driver Levels

Driver Level 1 (Trainee)	A new start Trainee Driver (class room) and a Trainee Driver who has successfully completed all necessary training and evaluation and is authorised as proficient to perform the required driving duties with an On The Job Trainer (OJT).
Driver Level 2 (Restricted)	A Trainee Driver who has completed thirty-eight (38) weeks successful training with the Driver Training Scheme and is able to drive unsupervised for thirty-five (35) weeks on qualified routes within the Metro system to complete the Metro Driver Training Scheme.
Driver Level 3	A Driver Level 2 who has successfully completed all additional training requirements at Level 2, will advance to Driver Level 3. After six (6) months at Driver Level 3, an assessment will be conducted by a Train Services Officer and Performance Safety Manager, who will consider the Driver's competency, performance and 'safety of line' record. If the assessment is positive, the Driver Level 3 will be progressed to Driver Level 4. If the assessment is not positive, the Driver Level 3 will remain on the Level 3 classification and a development plan will be implemented.
Driver Level 4	A Single Person Operation of Suburban Trains (SPOT) where the Driver has sole responsibility for all safe-workin[illegible]he train and full

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	knowledge of Metropolitan area.
Train Services Officer (Driver Training Specialist)	Develop, maintain, assess and deliver driver training courseware.
Train Services Officer structure (Principal Driver)	Conduct audits, investigations and reporting to ensure Drivers maintain competencies and safety standards.

6. Route Analysis Process

All lines, including new lines and changes to existing track layout, must be subject to a route analysis. This must be used to determine the requirements for the training and assessment of drivers' route knowledge, the criteria for route knowledge retention and the minimum criteria for operating over a route.

The route analysis process must assess the:

- Route characteristics
- Specific operating activities that are likely to be encountered
- Specific route hazards
- Locations where a higher level of situational awareness is required

The route analysis process must ensure that the route is analysed in both up and down directions and shall consist of the following:

6.1 Route Characteristics Analysis

A review to be undertaken to determine the:

6.1.1 Nature of the services

- What type of train services run over the route to be trained. E.g.- Freight trains, Suburban passenger, etc.
- What EMU trains are Metro to run over the route

6.1.2 Characteristics of the route

- This must be undertaken against the route characteristics and features as outlined in Appendix 1. Where required, this must be enhanced for specific operations according to Metro's operations

The above shall be undertaken as a desktop exercise where sufficient information is available and the assessor has detailed knowledge of the route. For new routes, this may involve a process of cab rides, site visits and review of Video Footage and other supporting route material.

The outputs of the above must then be summarised on *Route Characteristics Analysis Form*

Key points to be covered within the summary text are:

- A summary of the route in terms of complexity, kilometres, signalling systems and operating speeds e.g. two track ABS line non-complex route, 25 km in length with 12 stations, one complex location on the approach to terminal station
- The type of service to be operated, stopping and non stopping; whether required to shunt or carryout unusual movements
- T[illegible]umber of potential diversionary routes

6.2 Route Analysis

This consists of a more in depth analysis of the operational hazards over the route. The analysis must focus on:

- The operational hazards relating to the types of trains that will be working over the route
- Assessing the hazards associated with a route where they contribute to vulnerability of a driver error – see Appendix 2 Table 4 for example hazards
- The operational hazards associated with a route such as individual signals, stations, junctions, low adhesion sites etc., where a potential for error remains after professional driving techniques are utilised
- Summarising the principal key hazards that a driver requires and must know as part of normal route knowledge, e.g.- obscured platforms, gradients and Multi SPAD signals

Findings are to be recorded on *Route Analysis Form.* Each hazard will have a hazard code using Appendix 2 Table 4 as a guide. A brief description will then be recorded of the actual hazard encountered with reference to its locality and key section for use in training.

6.3 Route Analysis Workshop

A workshop involving subject matter experts must be held to review the outputs of 6.1 and 6.2 of this procedure. Timeframes for training are to be calculated using tables on *Route Analysis Workshop Form* as an initial guide. The subject matter experts experience will then be used to verify or modify these timeframes.

The workshop must through a process of professional judgement determine:

- The method of route learning and assessment specifically identifying any key areas which must receive a particular focus during training, assessment and route refreshing. This must identify the:
  - Competence required to drive trains in normal operation, and in foreseeable abnormal and degraded driving conditions where unusual shunting movements may be required
  - Locations where a higher level of situational awareness is required
- The approximate time it will take for Driver Level 1 to learn the route. Referred to as a route learning 'norm', this must take into account:
  - Information from 6.1 and 6.2 of the route analysis process
  - Previous route learning 'norms' where these are deemed to be fit for purpose
  - The opportunity to ride over the route in terms of a minimum number of trips
  - Statistical evidence of incidents over the route
  - Requirements for additional training in complex sidings, depots, signalling areas etc.
  - The Drivers Level of AQTF competencies required to be met as set out in Appendix 4

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- The approximate time it will take to train Driver Level 2,3 & 4 in new routes and refresh in previously learnt routes

The overall time set for route learning must also include the time taken for any initial briefing and the final assessment of route competence. Further guidance to assist in determining the duration of route learning including assessing whether training should be provided in darkness is provided within Appendix 3 of this standard.

- Route analysis will determine whether the route should be learnt as one complete route or split into sections to provide a staged process to learning
- The criteria for route knowledge retention must be based on the route analysis and the criteria outlined in Section 9 of this procedure

The attendees at the workshop shall include, but not be limited to:

- The person/s who conducted or who has the competence to clarify information relating to Section 6.1 and 6.2 of the route analysis process
- TSO-PDS, TSO-DTS and OJT's and experienced Drivers in the respective route groups and qualified in the vehicles to be operated over the route

The outputs of the workshop must be documented including any additional requirements for reviews to be undertaken.

To ensure consistency between depots, route workshops should be aimed at determining the management of route learning requirements for all depots operating over a route.

Where specific differences exist between depots, the reasons for any changes to route knowledge training, assessment and retention requirements should be stated, e.g. – a certain depot may only be rostered over a route during darkness or while the MURL is operating in a certain direction.

6.4 Verification of Outputs of Workshop

The TDM-HSS or nominated representative must review and verify the outputs from the route analysis workshops to ensure consistency between the outputs where a number of depots are involved. This is documented on the *Route Analysis Verification Form*.

7. Route Learning

7.1 Training in Route Learning Principles and Situational Awareness

7.1.1 Training in route learning principles

All Driver Level 1's undertaking basic driver training must receive training and be assessed in the principles of route learning. This will provide the Driver Level 1 with the necessary competence to:

- Identify and interpret information for route knowledge such as signalling maps, track layout diagrams, gradient charts; operating instructions; etc.
- Identify and respond to hazards within the driving environment which are specifically related to knowledge of routes, sidings and depots

Driver Level 4's will be briefed in continuation training on the principles of route learning to be used for all future changes or additional routes as outlined in this procedure.

7.1.2 Training in situational awareness

Training in situational awareness must be carried out as part of initial driver training during the practical train handling module when a trainee has achieved sufficient train handling and route learning experience to maximise the learning experience.

The training in situational awareness must be aimed at providing the Driver Level 1 with the necessary skills to apply this concept and for this to be applied and monitored during the final stages of practical train handling.

The training must include:

- Outlining the meaning of situational awareness, giving examples
- Hazard perception exercises

Whilst 'situational awareness' is a technique that must be applied at all times when driving trains, examples of locations where a higher level of situational awareness is required are:

- Approaching a major terminal, where there are a number of parallel lines and trains are approaching complex gantries or signals etc. Higher levels of situational awareness would be required when approaching the location under caution signals and other trains are running on parallel lines where there is a greater potential for reading across signals
- Encountering the first signal on the approach to a diversionary route where if a normal speed signal is displayed, it is evident that the signaller has incorrectly set up the junction
- Approaching locations / junctions where the risk of error could be significant, being especially alert and effectively managing internal and external distractions when the train is running under warning or low speed signals. Examples of distractions are changes of in-cab equipment / train radio, changes in line speed, dealing with external line-side features which have been analysed as a distraction etc.
- In advance of a known area of significant risk of error such as a station which has a history of overshoots and low adhesion incidents, recognising the conditions when low adhesion applies and adjusting driving technique accordingly

7.2 Route Packs and Route Briefing

7.2.1 Route packs

Route briefing packs must be developed for each route. The design, content and comprehensiveness of the pack must be proportionate to the degree of risk associated with the route. In summary these will:

- Outline the method and plan of route learning taking into account the complexity of the route and the route hazards. This must include indicating whether any specific requirements apply such as additional route learning during the hours of darkness
- Include relevant route information to support the route learning programme
- Provide information on any additional safety risk of personal safety during terminating movements etc., e.g.- spot pathway

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7.2.2 Initial briefing and provision of route information

As part of route learning, Drivers Level 1-4 must be briefed and provided with relevant information on the nature of work, the route characteristics and locations or situations encountered which require a higher level of situational awareness. This must include issuing all Drivers Levels with a route map and relevant supporting information.

The briefing process must be structured to take into account the complexity of the route and the need to ensure that the driver has the opportunity to progressively learn information in stages. I.e. if it is a complex route the driver must not be briefed / supplied with all route information when commencing the route learning programme.

7.2.3 Briefing drivers on route hazards and risk

Briefing information provided to all Driver Levels on route hazards must focus on key areas of risk or complex situations encountered over a route where there is a significant risk of error or where there is a significant consequence in event of an incident. When briefing drivers on complex areas, the briefing must focus on the generic hazards associated with the location, for example the approach to a major terminal.

Briefing on specific signals must be limited to signals which present a unique or significant hazard or where a residual hazards remain despite infrastructure measures to mitigate have been taken. The briefing of drivers in route hazards must take into account the briefing, training and competence of drivers to identify hazards within the driving environment and to apply control measures such as the application of professional driving techniques.

7.2.4 Route learning information

Examples of route learning information and supporting aids that form part of route learning are:

- A map of the route providing all relevant route information. Where signalling diagrams are provided, these may need simplifying to aid clarification
- For complex stations, depots and sidings, a separate more detailed map may be required supported by relevant working / local operating instructions and any restrictions (Route packs)
- Photographs, slides, route learning videos / DVDs highlighting specific aspects of the route
- The use of video with computer graphics overlay

7.3 Methods of Route Learning

The following examples of different methods of route learning are:

7.3.1 Group / supervised learning

7.3.1.1 In a classroom

Instruction is carried out by a TSO-DTS in a classroom, with the use of learning aids. Classroom training is not sufficient in itself to gain an acceptable standard of route knowledge and will only be used in combination with other methods. It may however be used for route refreshing of complex locations or sidings, diversionary routes or specific locations of identified risk where a classroom environment may provide a greater opportunity to review and simulate the different scenarios that may be encountered.

7.3.1.2 On site (walk through)

Instruction is carried out by a TSO-PDS / TSO-DTS / OJT on site under controlled conditions taking into account any specific requirements for personal and site specific safety instructions. Ratios of instructor to learners shall be 1 to 4 maximum.

7.3.1.3 Route learning in a cab

Instruction carried out by a TSO-PDS / TSO-DTS / OJT in the driving cab. This may be conducted during daylight hours or darkness depending on the outcomes of the route analysis process. Special training trips may be organised under the following circumstances:

- Where large numbers have to be trained at one time
- Over diversionary routes, which have little or no booked train service
- For refreshing of routes

7.3.2 Cab restrictions for route learning (Viewing)

The procedure for route learning must assess the suitability of the design of the driving cabs for route learning and any relevant restrictions that may be required to limit the number of learners in the cab. This shown in Table 2:

Table 2: Learners per train cab

Train / running	Revenue running	Non-revenue running
Comeng	TSO & 3 trainees	TSO & 4 trainees
X'Trapolis	TSO & 3 trainees	TSO & 3 trainees
Siemens	TSO & 3 trainees	TSO & 3 trainees
Hitachi	Not to be used	Not to be used

NOTE: The Rostered Driver for the revenue trains being used for training must travel in either the centre or rear cab of the train.

Hitachi trains are not to be used for route learning purposes due to restricted visibility. The assessment must take into account the ability of the route learner to have an unrestricted view of the route ahead or the surrounding views from the rear of the cab. Route learners must be advised of any restrictions in terms of driving cabs.

Anyone who is route learning in a cab must ensure that they do not cause undue distraction to the instructor driving.

7.3.3 Driving trains whilst undertaking route learning

7.3.3.1 Key principles

Practical 'hands on' driving experience shall normally form a part of route training. If this has been deemed unnecessary, the reasons must be documented, for example, an experienced driver who has previously signed the route or an experienced driver learning a non-complex diversionary route.

Where practical "hands on" driving experience is provided, the route learner must:

- Not undertake practical train handling until such time that their confidence of the route is such that practical experience would be beneficial in consolidating the knowledge the driver has already attained though the use of other route learning methods. This must be briefed to drivers

- Be supervised by a suitably qualified Workplace Trainer Assessor who has the required competence in route and traction knowledge to provide the necessary advice for the safe working of the train

7.3.3.2 Restrictions

Route learners from other train companies are not permitted to drive Metro Trains under any circumstances.

7.4 Control and Management of Route Learning

All Drivers involved in route learning must be subject to ongoing support to ensure areas of development are addressed with the individual and the opportunities for learning are maximised.

Records of such checks must be documented including the details of the trains the driver travels on during the course of route learning.

8. Competence Assessment and Recertification of Route Knowledge

8.1 Initial Assessment of Route Competence

Prior to any Driver Level certifying a route for the first time, the person's route competency must be assessed to establish the required standards have been achieved.

The assessment may consist of:

- A practical assessment of the route learner's competence to drive a train over the route. During this assessment the route learner should provide a running commentary of the route characteristics and relevant hazards, highlighting specific circumstances where a higher level of situational awareness is required. For complex locations, a physical walk round may be required dependant on the complexity of operations in the location i.e. sidings, major stations where route hazards are more prevalent
- A supporting theoretical assessment to measure underpinning knowledge taking into account the complexity of the route and the type of movements encountered and any issues not covered by commentary driving. This assessment does not need to cover specific issues already observed or verified during the course of the practical ride

Where arising from a process of route analysis, it is determined that a practical assessment is not required. For example, a Driver Level 2, 3 or 4 who has previously signed the route, the route is a non-complex diversionary route or there is no service available; other means of assessment using videos, DVD's or signal diagrams, etc. may be appropriate. However, the justification for using these must be documented.

8.2 Ongoing Assessment of Competence in Route Knowledge

Route knowledge records must be checked and re-certified as part of the ongoing assessment of driver competence. Assessments of driver route knowledge as part of the ongoing competence management process need not necessarily cover basic route knowledge that will generally be inferred by observation of practical train handling or other supporting evidence during the competence cycle. Key areas that must be covered include:

- Routes or sections of route where there are a significant number of route hazards and ongoing safety performance indicates a history of incidents where driver route knowledge is a contributory factor

- Diversionary routes or routes where there is a low frequency of rostered driving and the movement of trains over the route / section of route requires a high level of situational awareness
- Locations where unusual or complex moves or operations take place. This includes shunting work
- Any significant changes to the driver's route knowledge following the previous assessment. For example, a newly signed route

9. Route knowledge Retention

9.1 Introduction

Systems for managing the ongoing competence of train drivers must ensure drivers retain route knowledge. The preferred means of retaining route knowledge is for a driver to drive regularly over the route in the course of normal rostered driving.

9.2 Process for Determining Route Knowledge Retention Criteria

The criteria for route knowledge retention and the minimum criteria for which a driver should be permitted to operate over a route must be established through a process of route analysis. The process must involve an analysis by operators who have knowledge of the route taking into account the results of 6.1 and 6.2 of the route analysis process. This must consider factors such as the:

- Complexity of the route
- Nature of the rostered driving and moves encountered during normal and degraded operations, including shunting operations
- Route hazards and the potential residual risk of error due to deficiencies in route knowledge

9.3 Retention Frequency

The minimum criteria for route knowledge retention are:

Table 3 – Routes where rostered work exists

Complexity of route and nature of operations	Instances of rostered work	Maximum time permitted before an analysis is undertaken to determine whether a driver route refresher is required
Routes, depots and sidings which are determined as complex and frequent rostered work is deemed necessary to minimise the residual risk of error	2 instances of work in 26 weeks	2 years
Routes, depots and sidings which are not complex	1 instances of work in 52 weeks	2 years

9.4 Management of Route Retention

A 'drive over route' is defined as one return journey over a route. The route analysis workshop shall define whether travelling in both directions over a route is necessary.

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When constructing rosters, as far as possible, sufficient drives over routes should be provided to meet the programmed retention criteria and should be evenly spread throughout a roster rotation.

If a driver does not have the opportunity to drive over a route within the timescales defined in the right hand column of Table 3, an analysis must be made to determine whether the driver requires a route refresher.

Controls must be implemented to monitor the frequency of drivers operating over a route. These must take into account factors such as exchanges of shift between drivers, annual leave and sickness.

Schedule 2 Section 18(a) & (e) of the Metro Trains Melbourne Pty Ltd Rail Operations Agreement 2012-2015 states:

- *Drivers are permitted to swap on a day to day or weekly basis, or for permanent day. Afternoon or night shifts. Drivers should ensure when swapping that they do not lose conversancy on route knowledge and classes of trains.*
- *The Driver has a responsibility to remain conversant with all corridors that their depot runs over. If the roster section is required to assist, the Driver must give six (6) weeks notice that they need to run over a particular track.*

Following the initial signing of a route, additional support and development of drivers may be necessary to ensure drivers obtain sufficient exposure to the route to ensure competence is maintained. This may involve additional refreshing training, particularly in instances where new routes are being learnt in the event of timetable changes (extensions of work at a depot).

Drivers must be made aware of their individual responsibilities to:

- Ensure that they do not drive over a route unless they have been certified as competent to do so
- Advise their DTDM if they no longer consider that they are competent to drive over a particular route
- Ensure where possible 6 weeks notice, as referenced above, is given so DTDM can organise refresher training through TDM-HSS

Route Refresher Request Form is to be used for the above mentioned purpose.

9.5 Methods of Route Refreshing

The process of route analysis must determine the optimum method of route refreshing. This must take into account the complexity of the route, the nature of operations and the operating experience of the driver(s) concerned.

Practical riding over a route may not always be the optimum method. Therefore, other methods of route refreshing must be considered such as: route photographs, route DVDs, simulation and signal diagrams, route packs, etc.

10. Communicating Changes to Route Information

10.1 Assessment of Changes

A full route analysis must be carried out to establish the impact of the changes to railway infrastructure or train services which have the potential to impact on drivers' route knowledge.

10.2 Management of Change

10.2.1 Minor:

Minor changes to railway infrastructure are normally published by HSEQ in the Weekly Operational Notice. These include changes to track layouts, junctions, crossovers, bridges and permanent speed restrictions.

10.2.2 Intermediate:

Intermediate changes to railway infrastructure may similarly be communicated by means of the HSEQ published Weekly Operational Notice or through special signalling notices. The analysis must consider what type of briefing may be required for drivers with regards to route knowledge. Examples of intermediate changes include: alterations between complex centres; signal boxes withdrawn with a high proportion of signals involved; or block changes with significant relocation of signals.

10.2.3 Major:

Major changes include signalling alterations at complex layouts; extensive alterations to line-of-route signalling, new or extensions to lines and significant changes to methods of working or train timetables. In addition to the briefing requirements outlined in 10.2.1 and 10.2.2, the TDM-HSS or nominated deputy shall determine what formal briefing or training may be required to support a major change. The training may need to be supplemented by an assessment of route competence.

Information on the changes must be communicated to drivers at the earliest opportunity. If practicable, briefing must be given as close as possible to the implementation date. During the first weeks of implementation additional control measures may be required such as the:

- Train running and section times reflecting the need for drivers to run more cautiously over certain section of the route
- Need for additional monitoring of driver performance

11. Records of Route Knowledge

11.1 Route Records

The following records must be maintained by the TDM-HSS.

For all routes which a depot has programmed work including divisionary routes details of:

- Route analyses and supporting information of route learning, refreshing and the retention criteria for each route
- Route learning briefing and information packs
- Route assessment packs

11.2 Individual Driver Route Records

The following records must be maintained by the DTSM.

Records for individual drivers must contain:

- The sections of route over which the driver has been passed competent
- Details of any route learning or briefing provided including:

  - Duration of learning and number of trips provided over a route
  - The type of route learning provided
  - The amount of driving experience gained during route learning
- Details of the initial assessment and certification including:
  - Method and format of the route assessment
  - Details of practical handling undertaken during the assessment
  - Deficiencies identified and actions taken
  - Name and signature of the person who assessed the driver for competence, and the actual date of the assessment
- Route refreshing and recertification including:
  - Details of route refreshing provided and the reasons why
- Re-certification or cancellation of a route by a driver
- Systems to monitor compliance to the route retention criteria including the action taken when a driver has not worked over a route in accordance with the laid down frequency

11.3 Re-certification of Route Records

Recertification of records of drivers' route knowledge must be carried out as part of the competence management system for drivers.

12. Transition Arrangements

The transition arrangements shall be as follows:

12.1 Route Analyses

All route analyses to be reviewed to:

- Ensure they take sufficient account of any additional factors and areas of operational hazards identified within this procedure in terms of general and specific route hazards
- Ensure the analysis of hazards take sufficient account of infrastructure / other control measures which reduces the severity. This may involve the removal of some of the current hazards from existing hazard analysis processes
- Identify areas or specific locations over the route where a higher level of situational awareness is required

12.2 Route Learning

A review of current route learning briefing material to be undertaken for each route against the criteria outlined in this procedure to ensure sufficient information and emphasis is placed on key hazard areas and to remove information which may not be relevant.

If evidence indicates that route learning programmes and the associated time taken for route learning is fit for purpose, no further changes are needed through the implementation of this revised procedure although any future review of the route must apply the requirements of this procedure.

12.3 Route Assessment, Route Training and Route Knowledge Retention Criteria

All other requirements in terms of the management of driver route knowledge, including the criteria for route knowledge retention must be applied.

13. Monitoring and Review

13.1 Each Route Analysis should be reviewed every 3 years to ensure that it meets any new standards and to ensure any modifications along the route or to the traction vehicles affect the outcomes.

13.2 In addition to the requirements laid down in 13.1 above, these analyses will also be reviewed if any of the following circumstances arise that may affect its content:

- Changes to work practices / methods
- Changes to infrastructure, e.g. Signals, track layout
- Recommendations arising from accident investigations
- Recommendations arising from SPAD investigations where route knowledge was a factor
- Recommendations from regulating bodies (TSV, PTV, etc.)

14. Records and Enquiry

Item	Retained by	Period of Retention
Development Folder	Train Driver Standards Officer	3 years
Obsolete master copies	Train Driver Standards Officer	6 years
Distribution lists	Train Driver Standards Officer	3 years

Enquiries about this document are to be directed to Train Driver Standards Officer TSD.

15. Related Documents

- L4-TSD-FOR-042 Route Characteristics Analysis Form
- L4-TSD-FOR-043 Route Analysis Form
- L4-TSD-FOR-044 Route Analysis Workshop Form
- L4-TSD-FOR-045 Route Analysis Verification Form
- L4-TSD-FOR-046 Drivers Route Brief
- L4-TSD-FOR-047 Route Refresher Request Form

16. References and Legislation

- Metro Trains Melbourne Pty Ltd Rail Operations Enterprise Agreement 2012-2015
- TLI40410 Certificate IV in Transport & Logistics (Rail Operations) competencies

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Appendix 1: Guidance on Route Characteristics

Examples of key route characteristics to be analysed are:

- **Route Features:** Names and types of running lines
- **Signal System:** The signalling system(s) in use and controlling signal boxes
- **Safeworking Systems:** The Safeworking System(s) in use
- **Key Sections:** Routes are broken up into sections with similar track layout and common signalling systems
- **Communication:** Systems in operation and relevant contact number for signal boxes
- **Junctions:** Names of key junctions and associated speeds etc.
- **Permissible Speeds:** Permissible train and line speed restrictions
- **Specific Line Side Signage:** The location and meaning of unusual line side signage
- **Gradients:** Gradients which impact on train working
- **Tunnels:** Tunnels and associated working instructions for normal and degraded operations
- **Depots / sidings:** Relevant depots and sidings and specific local instructions
- **Level Crossings:** Method of operation and any specific local instructions
- **Shunting / unusual movements:** Terminating locations, locations where shunting movements, single line working could be undertaken, bidirectional working etc.
- **Operating Restrictions, Local instructions and Personal Safety:** Use of signal post telephones with limited clearance, restrictions on route availability, authorised walking routes which drivers require access to as part of their normal programmed work, restricted clearance at terminating locations
- **SPAD Locations:** Locations where a SPAD has occurred in the last 5 years
- **Multi-SPAD Locations**: Locations where more than one SPAD has occurred in the past 5 years
- **Stations:** Platform lengths, stopping points, staffing etc.

Appendix 2: Analysis of Route Hazards

1. Key principles

- Each route should be split into key sections based on factors which impact on the level of complexity. For example, the final approach to a major terminal station such as Flinders Street, a maintenance depot or a complex shunting siding, etc.
- Review each section of the route for hazards against the criteria outlined in table 4
- Evaluate the residual risk of driver error taking into account:
  - Controls measures such as: Trip Cocks, drivers' training and briefing in operational risk and measures taken to mitigate against incidents
  - The potential consequences for a catastrophic accident at the location. In line with SPAD risk ranking this should focus on head-on and head-on/side collisions rather than rear-end shunts, rear-end/side-on collisions
  - Assess whether there is a significant change in hazards during the hours of darkness

Prescribed analysis forms are listed in Section 15.

From the above process, the key issues that a driver needs to be briefed on must be summarised and placed into a *Drivers Route Brief.*

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2. Route Hazards

Table 4 – Route Hazards

Hazard	Description
Poor signal placement	Off side, SAS, too close to platform edge
Poor SPOT placement	Off side, wrong side door release, Sun Glare
SOY Hazard	Next signal not visible
Signal Read across	Gantry or adjacent tracks
Signal Read through	Viewing of next signal instead of aspect on current
Obscured Signal	SPOT Infrastructure, Foliage, Overhead Structure, Curves, Buildings, Crossing Trains, Sun glare, fog/inclement weather, lighting, Tunnels, Bridges, etc.
Obscured SPOT Infrastructure	Foliage, Overhead Structure, Curves, Buildings, Crossing Trains, Sun glare, fog/inclement weather, lighting, Tunnels, Bridges, etc.
Obscured Platform	Contributor to overshoot/misjudgement
Obscured Platform Markings	Contributor to overshoot/misjudgement
En route junctions	No route indicators contributing to wrong routing
Junctions Level 1	Contributing to SAS, wrong routing (simple to complex)
Junctions Level 2	Contributing to SAS, wrong routing (simple to complex)
Junctions Level 3	Contributing to SAS, wrong routing (simple to complex)
Low adhesion area	Wet leaves, oil from leaves, water channels onto rail from plat etc.
Gradients	Affecting train handling (inclining or declining)
Sidings Level 1	Siding instructions, Amount of sidings, Workshops, etc.
Sidings Level 2	Siding instructions, Amount of sidings, Workshops, etc.
Sidings Level 3	Siding instructions, Amount of sidings, Workshops, etc.
Major stations	Business around station, not just complex infrastructure
Signal Distance Inconsistencies	Affecting braking distances, etc.
Poor Infrastructure Security	Multiple trespass/vandalism locations
Line side Distractions	Sporting facilities, Port Philip Bay, Race Tracks, High Pedestrian Activity areas
Permanent Way Restrictions	Tramway crossings, curve boards, speed boards, etc
Irregular Terminating Locations	Only during occupations or disruptions
Speed Proving Trips	Trip still raised at intermediate location approaching obscured signal at stop or warning
Level Crossing Level 1	Long range visibility
Level Crossing Level 2	Limited Visibility
Level Crossing Level 3	Limited Visibility and Potentially Busy
Pedestrian Crossing 1	Static Protection
Pedestrian Crossing 2	Active Protection

3. Inclusion of outputs into briefing

The recording of hazards within the route analysis process should indicate whether this should be included in driver route briefing and assessment and the reasons why with any specific instructions.

Appendix 3: Guidance on determining route learning duration

1. Route learning in darkness

The workshop must consider the need for route learning in darkness based upon:

- Supporting statistical evidence which indicates certain route features or hazards are more difficult at night
- Locations or sidings with a greater proportion of work at night such as in a maintenance depot or complex stabling sidings
- The experience of the driver in terms of driving during the hours of darkness. For example a newly qualified driver signing additional routes compared to an experienced driver whose competence and safety performance indicates no significant problems have previously been experienced with driving during darkness
- The practicalities of actually undertaking route learning during darkness at certain times of the year

As a general guide the table 5 may be used:

Table 5 – Training in Darkness

	Driver Level 1 (Within first 12 months post initial qualification)	Driver Level 2
Complex routes, stations, depots, maintenance sidings	20% to 25% of route learning time during darkness	15% of route learning time during darkness
Non complex routes – Two line / four line TCB	15% to 20% of route learning time during darkness	10% of route learning time during darkness
Single lines – non complex with few signals etc	10% to 15% of route learning time during darkness	5% of route learning time during darkness

2. Route learning duration

Table 6 provides a guide to assist in determining route training times as part of the Workshop. The guidance is aimed at providing a base criterion for:

- New routes where there is no supporting information available to quantify the route learning time
- When reviewing an existing route where there are reservations over the current time taken to route learn

The suggested times must be considered with other supporting factors and the outputs converted into '**trips over a route**'.

Table 6 – Training Time Guide

Category	Complexity Level	Learning km per hour
C1	Final approach to major complex stations such as Flinders St, Southern Cross	0.5
C2	Normal multi line / bi-directional routes	1
C3	Two line railway, not complex	1.5
C4	Long single line sections of route – non complex with few signals etc.	2

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Appendix 4: Competencies applicable to Route Knowledge for Metro

TLI10 Unit Code	Unit Name	Performance Criteria
TLIC4019A	Drive train to operational requirements	2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 3.1, 3.2, 3.3
TLIC4023B	Operate train with due consideration of route conditions	1.1, 1.2, 2.1, 2.2, 2.3, 2.4, 3.1, 3.2, 3.3, 3.4

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Approval

	Name	Position	Signature
Document Author	Paul Crisp	Train Driver Manager, Head of Safety & Standards	
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Approving Manager	Perry Ramsey	Head of Train Services	

Amendment Record

Approval Date	Version	Description
14/02/2012	1	Rebadged from CONNEX to METRO Replaces cml-8.13-pr-048
29/01/2013	2	Transferred from Safeworking and Signalling to Train Service Delivery and renumbered from L1-SWS-PRO-004 to L1-TSD-PRO-004. This version modifies: • Title from Persons Authorised to Travel in Brakevans of Electric Trains/Cabs of Stony Point Sprinter This version introduces: • Classifications of Metro identity cards endorsed to travel in leading cabs • Drivers to travel in centre or rear cabs unless rostered to travel in leading cab • Requirements for authorised personnel when travelling in leading cab • Requirements for Drivers when travelling in leading and non-leading cabs
29/04/2013	3	This version introduces: • Leading Cab Conduct Reference Card for Authorised Persons • Prohibition of Driver interview in leading cab • Driver instructions for dealing with authorised persons in leading cab not acting in accordance with this procedure • Train Controllers, Metrol to the procedure This version removes • Yellow Cab Pass holder medical fitness section, as is detailed in L0-HMR-PRO-037 Employee ID Card

1. Purpose

This document details the procedures, instructions and restrictions relating to persons authorised to travel in Metro train cabs.

2. Scope

Travel in the leading, centre and rear cabs of EMU trains and Stony Point Sprinters.

3. Abbreviations and Acronyms

- TSO-PDS Train Services Officer – Principal Driver Specialist
- TSO-DTS Train Services Officer – Driver Training Specialist
- OJT On Job Trainer

4. Responsibilities

- Train Drivers and Trainee Train Drivers
- Train Services Officer – Principal Driver Specialists
- Train Services Officer – Driver Training Specialists
- Group and Depot Train Driver Managers
- Head of Train Services
- Train Controllers, Metrol
- All other persons authorised to travel in cabs of Metro EMU or Sprinter trains

5. Definitions

5.1 Metro Identification Card Endorsed with a Green Cab Pass

5.1.1 Held by a Metro Train Driver who:

- Has demonstrated by knowledge and passed necessary examinations and assessments, and is certified competent in rules, operating procedures, route knowledge and the rolling stock concerned.
- Is certified as competent to instruct and assess Train Drivers to establish that they are achieving and maintaining standards of competence for train working.
- Meets the medical fitness and competence standards for Train Drivers.

5.1.2 Defined positions holding a green cab pass:

- TSO-PDS
- TSO-DTS
- Train Driver Managers certified competent to drive

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5.2 Metro Identification Card Endorsed with a Purple Cab Pass

5.2.1 Held by a Metro Train Driver who:

- Has demonstrated by knowledge and passed necessary examinations and assessments, and is certified competent in rules, operating procedures, route knowledge and the rolling stock concerned.
- Meets the medical fitness and competence standards for Train Drivers.

5.2.2 Defined positions holding a purple cab pass:

- Metro Train Driver
- Metro Train Driver/OJT
- Metro Project Officer certified competent to drive

5.3 Metro Identification Card Endorsed with Blue Cab Pass

5.3.1 Held by Metro staff with:

- A minimum Level 1 Track Safety Awareness certification.
- An understanding of rules and operating procedures. May provide the Driver with assistance for protection arrangements for obstructions on the line, reporting of emergencies and summoning assistance, including emergency services, rules and instructions for obtaining isolation of overhead power and precautions for safety when evacuating/detraining passengers to a position of safety in an emergency.

5.3.2 A Blue Cab Pass, whilst endorsed "Competent Person", does not infer that the holder can act as a competent person in respect of defective on train safety equipment.

5.4 Metro Identification Card Endorsed with Yellow Cab Pass

5.4.1 Held by a Trainee Driver.

5.4.2 Held by other Metro staff with a minimum Level 1 Track Safety Awareness certification who have responsibility for:

- Safety of train operations
- Monitoring the technical performance of signalling or overhead power equipment or rolling stock
- Monitoring track and track-side infrastructure

5.5 Metro Identification Card Endorsed with Red Cab Pass

Held by other Metro staff who must be:

- Accompanied at all times in the leading cab by a Green or Blue pass holder
- Briefed on the requirements of leading cab conduct
- Be aware of the action to take in the event of an incident or accident

NOTE: The Head of Train Services is the sole delegated authority to authorise a cab pass on the Metro Identification card

6. Persons Authorised to Travel in the Leading Cab

6.1 Drivers are to ensure that only authorised persons as below are allowed to access and travel in the leading cab:

6.1.1 Metro Staff in possession of Metro Identification cards endorsed with Cab Pass

6.1.2 Drivers/OJT and Trainee Drivers travelling, but only when **clearly reflected in the roster book, on a roster alteration slip or otherwise instructed** in order to effect relief. When this is not the case they are required to use non-leading cabs. This will be reflected in the roster book or on a roster alteration slip for the travelling Driver/OJT and Trainee Driver.

6.1.3 Victorian Police Officers (uniformed or in plain clothes) in the execution of their duty.

6.1.4 Persons in Possession of Temporary Leading Cab Travel Authority

- The Temporary Leading Cab Travel Authority is issued to both non Metro employees, and Metro employees not usually required to travel in the leading cab as part of their duties
- Holders of a Temporary Leading Cab Travel Authority must be accompanied at all times in the leading cab by a Green or Blue cab pass holder and must be briefed on the required conduct as per Section 7.2 of this document prior to entering the leading cab.
- Holders of a Temporary Leading Cab Travel Authority **must switch mobile phones off or to silent** whilst in the leading cab and **must not answer calls.**

NOTE: The Head of Train Services, Train Services Operations Manager, and Train Driver Manager, Head of Safety & Standards have the delegated authority for the provision of the Temporary Leading Cab Travel Authority.

6.2 Holders of Blue, Yellow, or Red leading cab passes or a Temporary Leading Cab Travel Authority must also be issued a Leading Cab Conduct Reference Card for Authorised Persons upon receipt of the cab pass and carry it at all times when travelling in the leading cab.

6.3 Train Driver Managers travelling in the leading cab must also be in possession of a Train Driver Manager Infrastructure Observations Checklist.

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7. Leading Cab Conduct

7.1 The primary role of a Driver is to ensure the safety of the train and passengers.

NOTE: When authorised persons are travelling in the leading cab, it is extremely important that the Driver is not distracted from safely performing their primary role.

7.2 When authorised persons are travelling in the leading cab, the following must be strictly adhered to:

- Prior to entering the leading cab, authorised persons must present their cab pass to the Driver and inform them of the reason for the requirement to travel in the leading cab
- **Switch mobile phones off or to silent.** Only Metro staff may answer calls, and only when they are urgent and relate to an operations occurrence/safety incident. If the call is to be of substantial length, vacate the leading cab at the first available opportunity
- Conversation with the Driver is to be kept to a minimum and must be especially considered when the train is:
  - Operating in a high density signalling areas
  - Approaching signals at STOP
  - Departing a platform
  - Approaching platforms where scheduled to stop
  - Approaching buffer stops or baulks

NOTE: Discussion related to Driver performance management or undertaking interviews with a Driver in the leading cab is prohibited.

7.3 When Drivers/OJT and Trainee Drivers are rostered or instructed to travel in the leading cab they must keep conversation to a minimum, act as a second pair of eyes and, when required, remind or alert the Driver driving the train when it is departing on a warning or caution signal aspect or operating under restrictive signal aspects, etc.

7.4 Failure of Correct Cab Conduct to be Followed

7.4.1 If authorised persons fail to act in accordance with Section 7.2 or 7.3 when travelling in the leading cab, the Driver must request them to refrain from further disruptive behaviour and to act in accordance with this procedure and as provided on the Leading Cab Conduct Reference Card for Authorised Persons.

7.4.2 If the authorised persons continue to act in a disruptive manner, the Driver must stop the train at the next station and report the matter to the Train Controller, Metrol, advising of the name of the cab pass holder and the manner of disruption.

7.4.3 Metrol must contact the Head of Train Services or their delegate and inform them of the circumstances.

7.4.4 The pass holder may be requested to leave the cab and submit a report for investigation by the Head of Train Services or their delegate.

8. Leading Cab Travel Restrictions

8.1 Refusal of Entry

8.2 A Driver will not have the right to refuse entry to the cab for a leading cab pass holder, **unless one of the following applies:**

- The cab pass is not valid due to an invalid date or it is not for Metro services, or restrictions such as being accompanied are not adhered to
- The maximum number of authorised persons in the leading cab is exceeded
- A Driver/Trainee Driver is undergoing training, remedial training, assessment or safety audit check with a TSO-DTS, TSO-PDS or OJT. Travelling in this circumstance is not permitted unless authorised by the TSO-DTS, TSO-PDS or OJT. Such authority is to be based on the importance of the request (eg, inspection of track/signals) and entry may only be refused to avoid distractions

8.3 Maximum Numbers Allowed

8.3.1 The maximum number of authorised persons permitted to travel in the leading cab of a Metro train at any one time (in addition to the Driver driving the train) is two (2), **except as shown hereunder.**

8.3.2 Where specially authorised groups are undertaking signal sighting, route knowledge training, inspections or train testing, a maximum of **four (4)** persons are permitted to travel in the leading cab (in addition to the Driver driving the train) plus any one of:

- Head of Train Services
- Group or Depot Train Driver Manager
- TSO-DTS or TSO-PDS

8.3.3 Level 1 Driver Route Knowledge Training

Where groups of Level 1 Drivers are undertaking route knowledge training the maximum number of people in the cab is defined in *Route Knowledge Analysis and Training Procedure* and is shown in the table below:

Train/Running	Revenue Running	Non-revenue Running
Comeng	TSO & 3 Trainees	TSO & 4 Trainees
X'Trapolis	TSO & 3 Trainees	TSO & 3 Trainees
Siemens	TSO & 3 Trainees	TSO & 3 Trainees
Hitachi	Not to be used	Not to be used

NOTE: The rostered Driver for the revenue trains being used for training must travel in a non-leading cab of the train.

Hitachi trains are not to be used for route learning purposes due to restricted visibility

Metro Trains Melbourne

Stage 24 Continuation Training

Session 3
SPAD Updates

- SPAD Update
- Setting Back Trains after Overshoot / SPAD
- Task Prioritisation

Session 3
SPAD Update

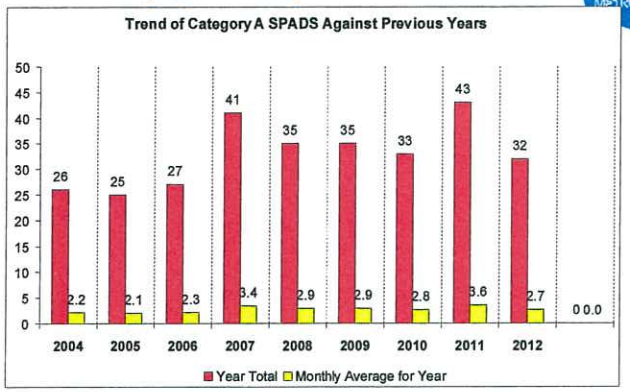
Introduction
Subjects Covered

Session 3- SPAD

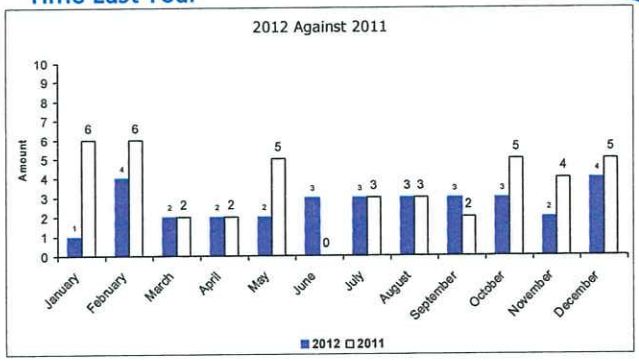
1 SPAD Update
2 Setting Back Trains after Overshoot/SPAD
3 Task Prioritisation

SPAD Update

Trend of Category A SPADS Against Previous Years



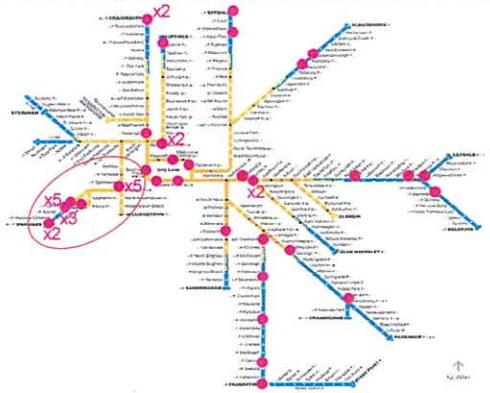
Trend of Category A SPADS Against the Same Time Last Year



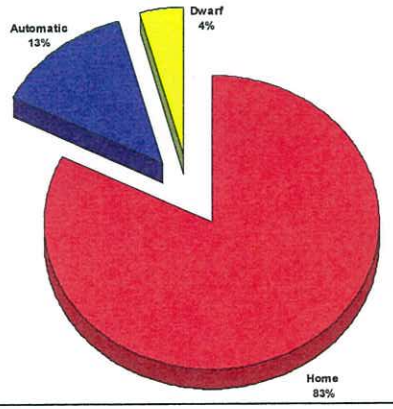
Category 'A' Driver Human Factor SPAD's 2012

Location	SPADs
Inner Area Group	7
Clifton Hill Group	2
Burnley Group	5
Northern Group	12
Caulfield Group	6
TOTAL	32

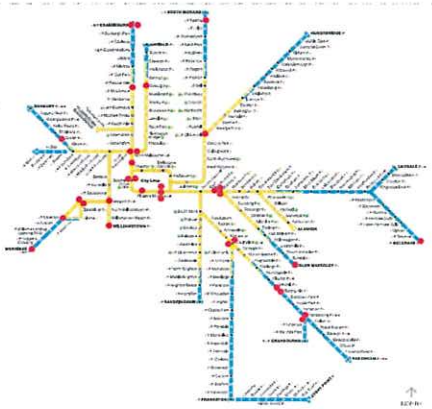
SPAD Geographical Locations 2007 - 2011



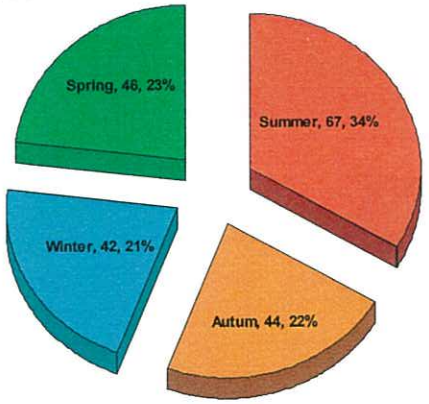
SPAD by Signal Type 2007 to 2013



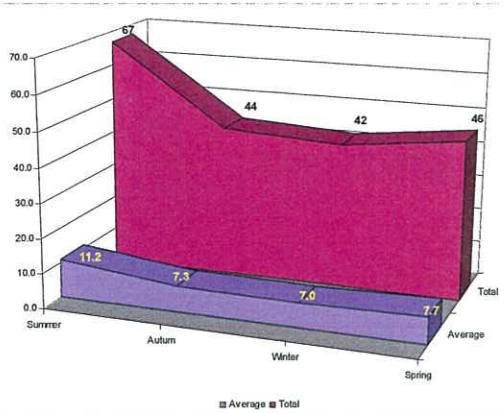
SPAD Geographical Locations 2012



SPADs by Season 2007 - 2013

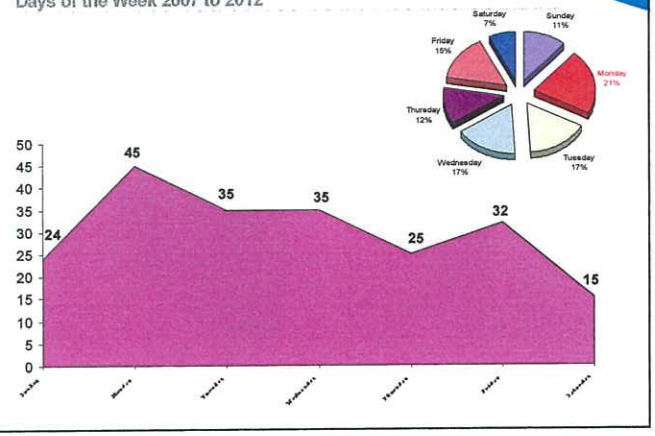


SPADs by Season 2007 - 2013



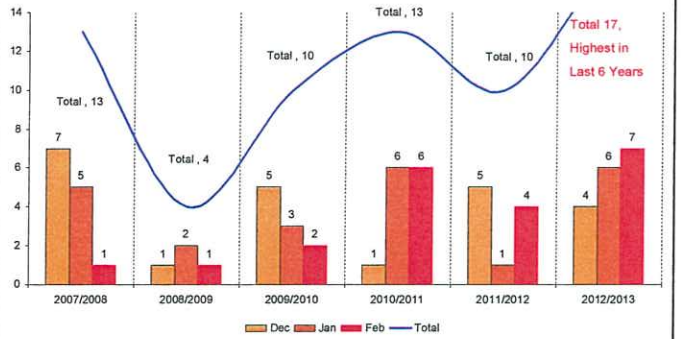
SPADs by Days of Week

Days of the Week 2007 to 2012



SPADs by Season 2007 - 2013

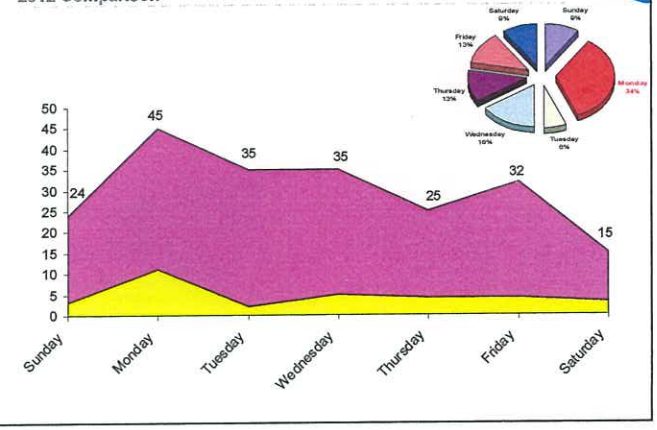
Summer



12

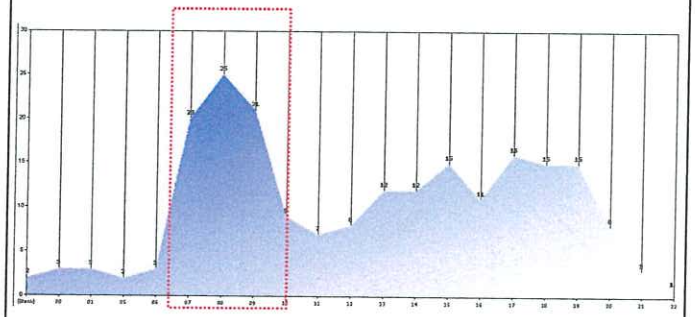
SPADs by Days of Week

2012 Comparison



Times of Day

2007 to 2012



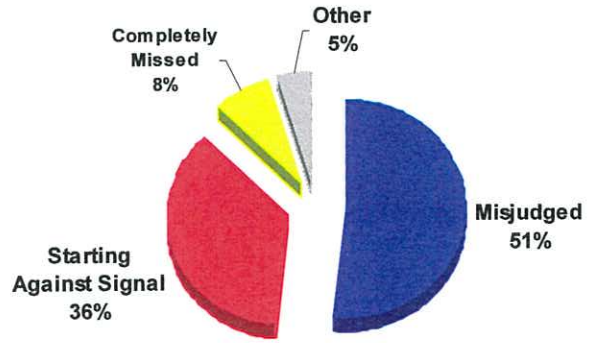
15

Human Factor Analysis

16

SPAD by Definition

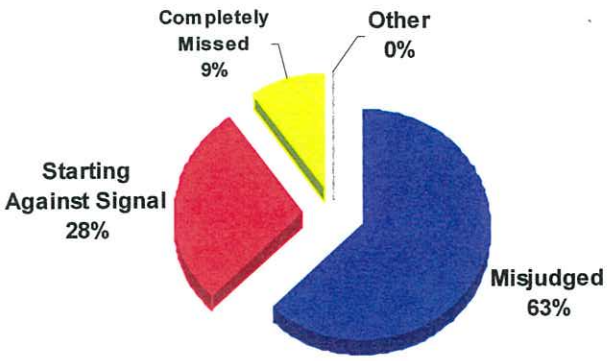
All SPADs 2007 - 2012



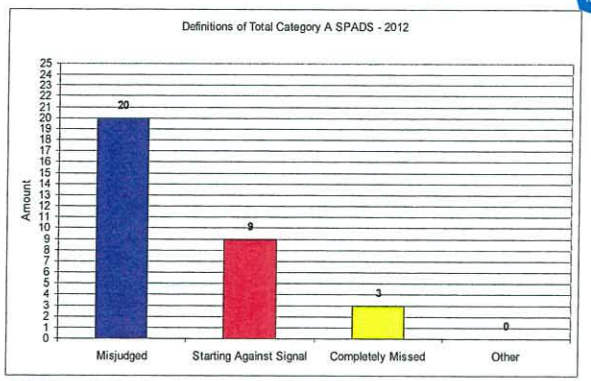
17

SPAD by Definition

2012



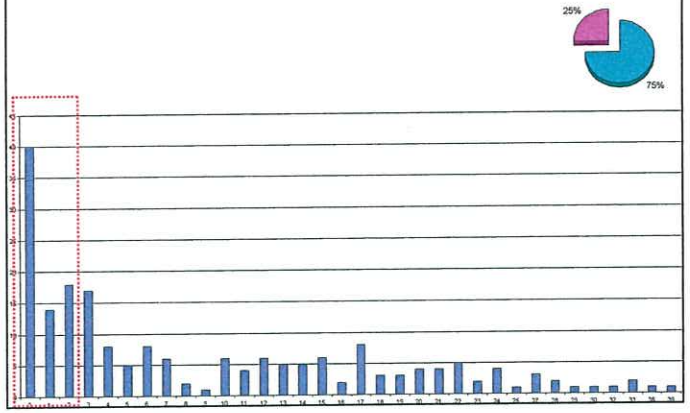
Definitions of Total Category A SPADs – Yearly Total 2012



- Description of Definitions
- **Misjudged.** Misjudged train behaviour or environmental conditions.
- **Starting Against Signal.** Failing to check signal aspect prior to departure
- **Completely Missed.** Failing to locate signal, no attempt made to stop at signal.
- **Other** – Failing to react to caution aspect or passing a red signal

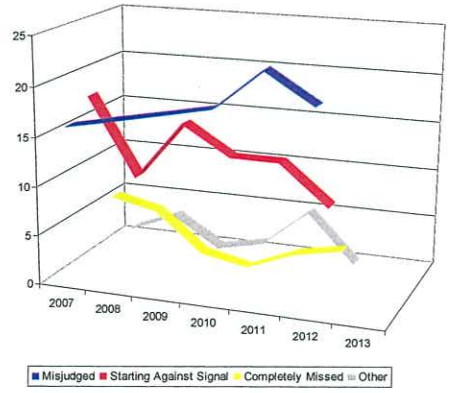
Driver Experience

All SPADs 2007 to 2012



SPAD by Definition

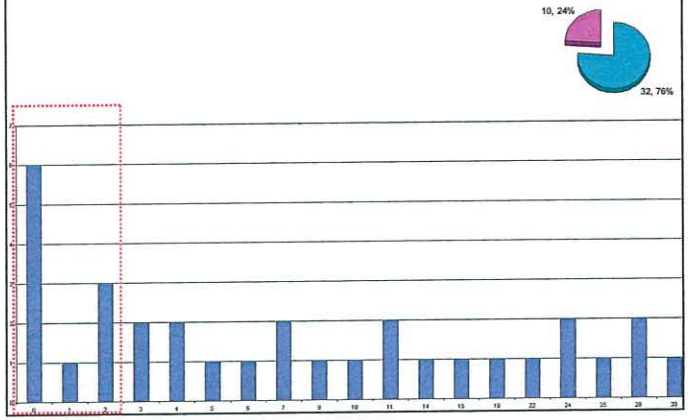
Trend Over All SPADs 2007 to 2012



20

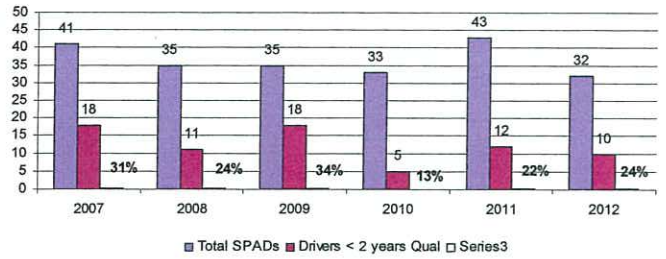
Driver Experience

2012



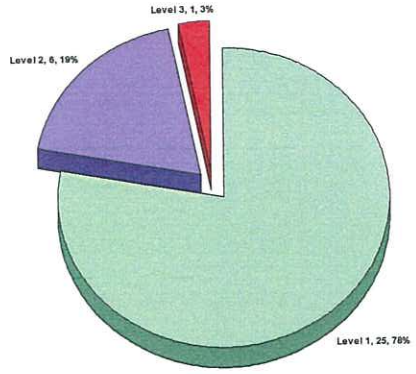
Driver Experience

Trend Over Last 6 Years



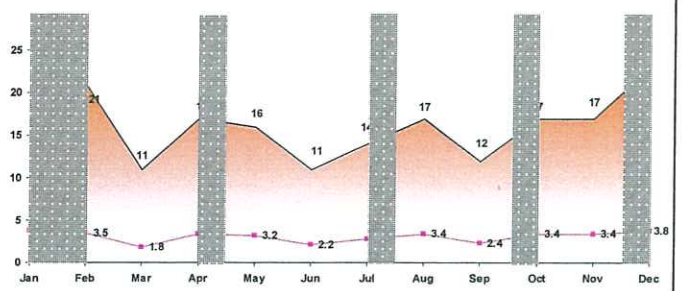
SPAD Severity Level

2012



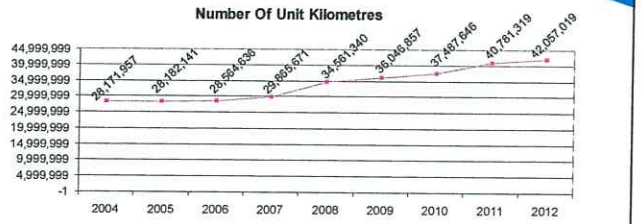
- **Level 1**: SPAD by 25 meters or less
- **Level 2**: SPAD between 26 to 200m
- **Level 3**: SPAD over 200 meters or trip and reset

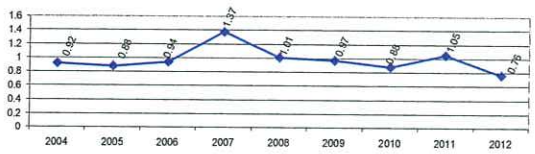
School Holidays



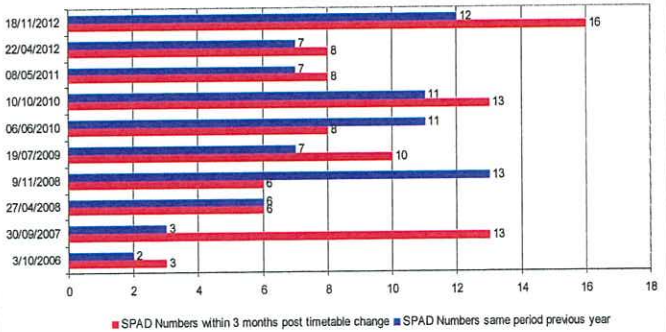
Organisational Analysis

Number Of Unit Kilometres

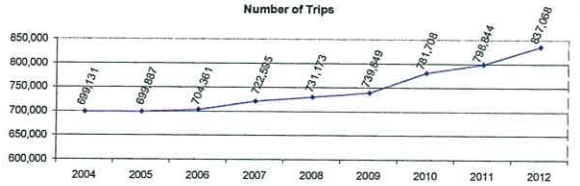


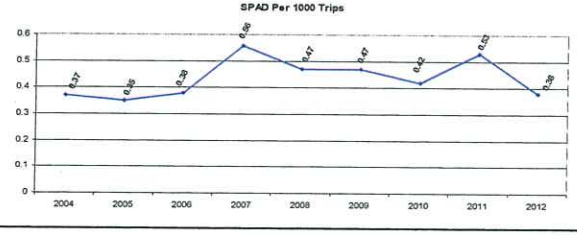


SPAD Vs Timetable Change



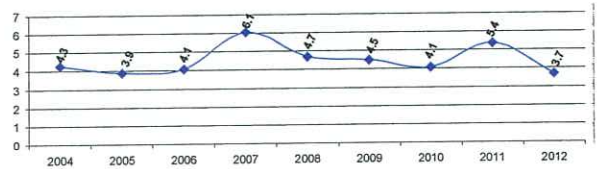
Number of Trips



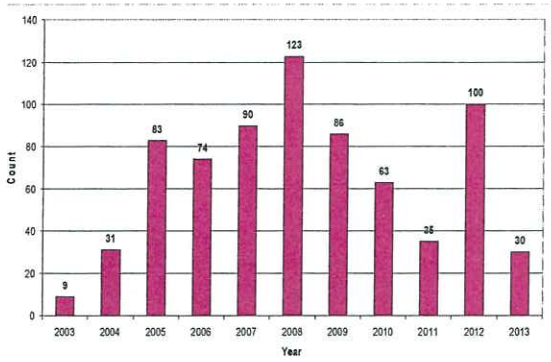


Driver Establishment





Driver Year Qualified



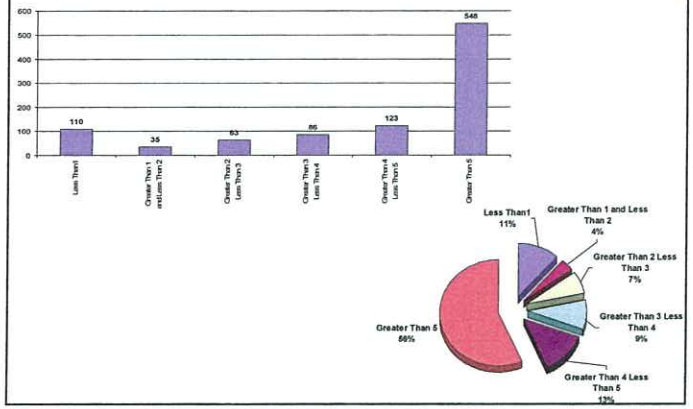
2013 - Further 53 Drivers to Qualify

44 Level 4 Drivers & 9 Level 2

SPAD Prevention

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Current Driver Experience



SPAD Prevention

Starting Against Signal SPADs:

- When a signal located at or near the departure end of a platform displays STOP, Drivers **centre the reverser** until the signal displays a proceed aspect.
- ALWAYS **centre the reverser** after arriving at signals at STOP, either at a platform or mid-section.
- Before departing, always remember to check your **STDS**:
  - **S**IGNAL — Check signal is displaying a proceed aspect
  - **T**IME — Check departure time
  - **D**EPARTURE — Carry out departure sequence
  - **S**ECOND LOOK — Take a second look at signal

SPAD Prevention

Starting Against Signal SPADs:

Remember, always take a 2nd LOOK!

before moving.

SPAD Prevention

In Section SPADs:

- If the next signal is not in clear view, e.g. it is positioned after a curve and you are not sure of its location or aspect, reduce train speed and approach next signal slowly.

Remember: The best safeworking system on the railway is an ALERT and CAUTIOUS Driver!

SPAD Prevention

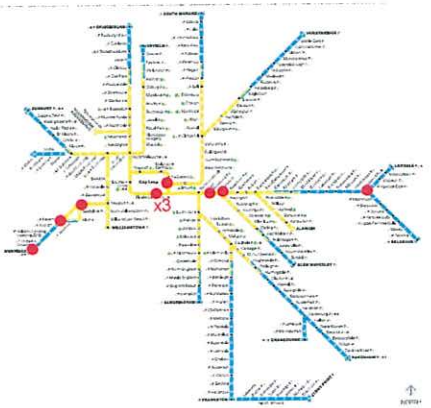
Starting on Yellow SPADs:

- After arriving into platform on a WARNING aspect and the signal ahead is not in clear view, press the MEMORY AID DEVICE as a reminder that the next signal is at STOP.



TOP MultiSPAD Signals

1. 746(FSS) x6
2. BLY377 x6
3. 736(FSS) x5
4. 346(FSS) x5
5. RWD323 x5
6. LAV705 x4
7. 464(NU Loop) x4
8. 216(ALJ) x4
9. ERM328 x4
10. WER22 x4



What's Next?

- So what can we do better?
- What more can we do?



Setting Back Trains After Overshoot/SPAD

Setting Back Trains After Overshoot/SPAD

- Before any train is set back, the permission of the Train Controller Metrol must be obtained.
- The setting back of trains can be a high risk operation.
- It can result in trains being moved in a direction that is unexpected by persons on or near the line which if not properly controlled could result in a train accident.

You Must Change Ends and Drive From Other End unless a competent person rides in the rear cab.



- In all cases care must me taken to ensure the movement is completed safely.

Special Safe Working Instructions

Three Position Signalling Areas

- The permission of the Train Controller Metrol must be obtained.
- If the rear of the train has passed a three position signal, the train must not set back into the track section in the rear of the signal without the correct authority.

Metrol Controlled Area

- This area is bounded by Richmond, East Richmond, Clifton Hill, North Melbourne and South Kensington.
- Before any train is set back, the permission of the Senior Train Controller Metrol must be obtained.

Setting Back Within Station Limits

- The Driver must be given verbal authority from the Signaller for the wrong direction move to commence. This authority may be given via the radio, post telephone or in person.

Session Recap
Key Points

The train must not set back to any point in the rear without the correct authority.

Before setting back,
- you must change ends and drive from other end, or
- have a competent employee in the rear cab to protect the move.

Further Questions or Discussion?



Task Prioritisation

Task Prioritisation

You are the Driver of this train and an urgent defect needs to be reported.

Discuss all tasks and order of priority.



Task Prioritisation

An analysis of recent Human Factors SPADs has revealed that task prioritisation is a key factor leading to many of these incidents.

Examples:
- Writing TMM
- Answering radio/phone call
- Making PA announcements
- Going into work bag
- Answering PEI call

while approaching a signal at stop.

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Task Prioritisation

- As a professional Driver your primary task is the safety of the train and the passengers. One of the greatest threats facing drivers in today's hectic environment is being distracted from the primary task.
- It has been identified that being distracted from driving has contributed to a large number of SPADs, overshoots and other operational incidents.
- It's important to prioritise your attention and actions.

Task Prioritisation

Rail accidents involving task prioritisation errors

The train driver blamed for the worst U.S. train crash in 15 years was sending and receiving text messages seconds before his crowded commuter train skipped a red light and collided head-on with a freight train.

Killing 25 people, including the driver of train, and injuring 135.



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Is Multitasking the Answer?

Successful Multitasking

- Uses automated behaviours for one task
- E.g., Walking is an automated behaviour, whereas learning a new dance step eventually becomes automated
- Talking while walking is an example of successful multi-tasking



Multitasking Limitations

- Only possible when one or both tasks are highly practiced (and become automated)
- Only possible during familiar circumstances

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Is Multitasking the Answer?

Human Limitations

When not using automated behaviours

- Conscious control of behaviour uses a severely limited supply of mental resources
- In turn, this limits the human ability to multitask without forgetting tasks and without errors

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Introducing: Driver Self-Management Training

Three main Human Factor issues relating to multitasking:

1. Task Management
2. Attention Management
3. Workload Management

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Task Management

Task management training provides operators with skills and knowledge to be able to prioritise and order tasks efficiently.

Task Prioritisation:

- Is an on-going process
- Initiate new tasks
- Monitor on-going tasks
- Selectively prioritise tasks
- Terminate, shed completed or less important tasks

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Task Prioritisation

Train Driving (Procedural Prioritisation):

DMAR

1. Drive To signals/conditions
2. Monitor in-cab Instruments and track-side environment
3. Anticipate and prepare where to slow down or stop
4. Respond to/initiate radio or phone communications

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Task Prioritisation

Limitations of Task Prioritisation Hierarchies:

Auditory Interruptions

Auditory communication tasks (e.g., answering radio/phone)

- Interrupting (very hard to ignore)

Lower Priority Auditory Interruptions can overpower Procedural Priorities in train driving.

For example, answering radio or phone calls, rather than putting driving tasks first.

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Common Human Errors During Task Prioritisation

Two Common Human Errors during Task Prioritisation are:

- monitoring lapses
- forgetting to do deferred tasks.

Monitoring lapses

A common human error is a failure to adequately monitor all tasks i.e. paid inadequate attention to one task while performing another task.

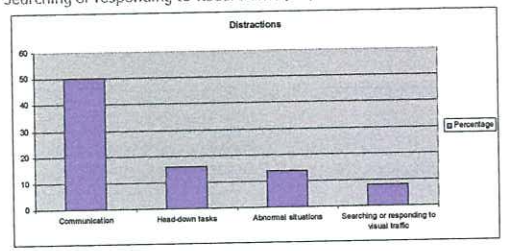
Example: Not checking a signal on approach or when departing a station.

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Common Human Errors During Task Prioritisation

There are a wide range of activities that interrupt, distract or preoccupy the Driver resulting in incidents. Most of these activities fall into one of four categories:

1. Communication (50%),
2. Head-down tasks (16%),
3. Abnormal situations (14%), or
4. Searching or responding to visual traffic (8%).



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Causes of Monitoring Lapses

Monitoring is an inherently error vulnerable task:

- Is often a vigilance task (checking for low frequency events)
- Attention easily diverted away from vigilance tasks (to more interesting activities or events)

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Mitigating Monitoring Lapses

Six useful techniques to reduce the chance of having monitoring lapses:

1. Recognize multi-task demands and divide attention among them
2. Review task in advance to identify critical junctures and establish monitoring
3. Raise red flags in vulnerable situations and increase vigilance
4. Assign neglected tasks higher priority
5. Create a visual, auditory, or tactile reminder
6. Manage workload

Useful Techniques to Reduce the Chance of Monitoring Lapses

1. Recognize multi-task demands and divide attention among them:

Principle - Identify specific things to monitor (and what not to monitor):

In Practice - There are many miscellaneous tasks that take the Driver's attention away from driving.

Principle - Divide attention between multiple tasks and use discipline to avoid preoccupation with any secondary task:

In Practice - Switching between tasks is useful, but not when approaching a signal, station or departing a station.

Principle - Break concurrent tasks into subtasks and pause between subtasks to monitor:

In Practice - Put radio on hold; Answer radio only after driving tasks are completed.

Useful Techniques to Reduce the Chance of Monitoring Lapses

2. Review tasks in advance to identify critical junctures and establish monitoring:

In Practice

Risk Triggered Commentary Driving

- Speaking "check signal before proceeding" before starting against a signal at a station,
- Speaking "temporary speed restriction starts at Westall" when departing the station just prior, or
- Speaking "the next steps are" X, Y, and Z

Useful Techniques to Reduce the Chance of Monitoring Lapses

3. Raise mental red flags in vulnerable situations and increase vigilance:

In Practice

- Before departing, a Driver could review the route, noting well known SPADed signals, and speed change locations such as for Temporary Speed Restrictions.

Useful Techniques to Reduce the Chance of Monitoring Lapses

4. Assign neglected tasks higher priority:

In Practice – e.g., during times of low workload

Often neglected monitoring tasks (to give higher priority) are:

- Recheck roster book to check running conditions,
- Checking the fault lights,
- Adjusting seat,
- Reporting defects.

Useful Techniques to Reduce the Chance of Monitoring Lapses

5. Create a visual, auditory, or tactile reminder:

In Practice

Starting Against Signal is a common signal monitoring lapse. Some useful ways of reminding yourself to check the signal before moving are:

- Centring the reverser
- Applying the park brake (on Siemens and Comeng)
- Raising the trip (on X'Trapolis)
- Pressing Emergency Stop button
- Sticking on the dashboard a post-it note or other visual reminder
- Or whatever works for you.

Useful Techniques to Reduce the Chance of Monitoring Lapses

6. Manage workload:

Principle - Rearrange the sequence of tasks to reduce workload at critical junctures.

In Practice – Use the **DMAR** Task Prioritisation Hierarchy:

1. Drive (first),
2. Monitor,
3. Anticipate, and lastly
4. Respond (for example, answering radio/phone)

Especially don't answering the radio/phone when approaching signals/stations, or when leaving stations.

Session Recap

Key Points

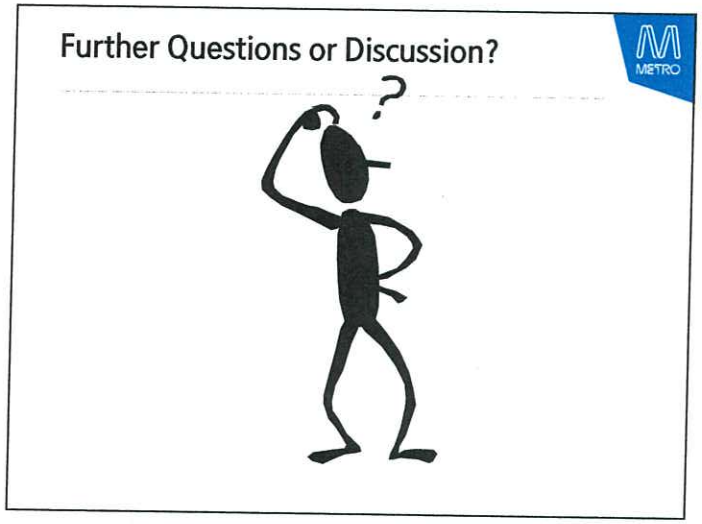
Managing Workload

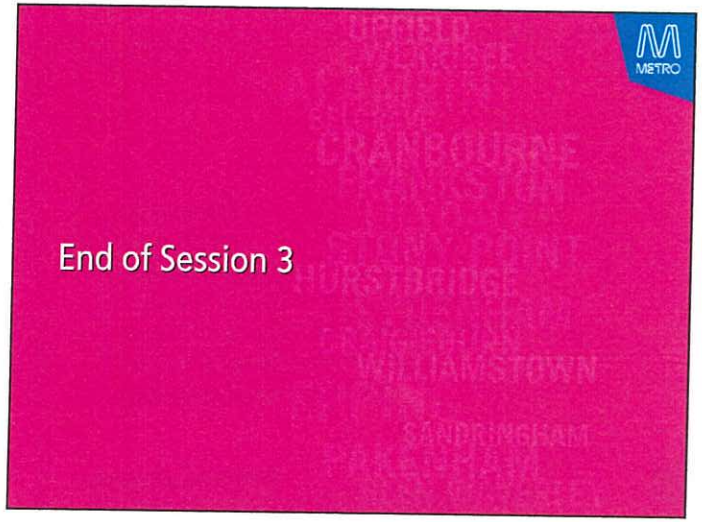
- Prepare well for the journey / task ahead
- Prioritise and allocate tasks
- Continuously anticipate what will happen next
- Keep some resources in reserve
- Know and respect your own / others' limits

Deciding Task Priorities

- Importance of task
- Consequences of not doing it
- Urgency of task
- Time / effort required
- Effects on other people / other tasks
- Personal / company goals

Prioritise Your Actions to Control the Distractions!





Metro Trains Melbourne

Stage 24 Continuation Training

Session 4
Training Lessons

- Dwarf Signals
- Northern Group Speed Limits
- Track Maintenance Protection
- Train Preparation Procedures Update
- Dividing EMU Trains Update

SESSION OBJECTIVES

At the end of this session according to the Rules and Operating Procedures, the Learner will be able to:

a. Identify Dwarf signals
b. Describe the purpose of Dwarf signals
c. Identify and understand the meaning of the aspects displayed by Dwarf signals
d. Describe how a Driver must react to each aspect of the two position or three position Dwarf signals
e. Describe the exceptions to pass a Dwarf signal at the Stop position

INTRODUCTION

The Dwarf signal is used to control the following movements from:

- Running line to running line
- Running line to siding
- Siding to siding
- Siding to running line

Dwarf signal can be either a Two position signal or a Three position signal.

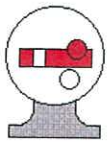
TWO POSITION DWARF

A two position Dwarf signal can be either a semaphore or light type signal.

Dwarf Semaphore Signals

Two position semaphore Dwarf signals consist of a white target on which is painted a red square ended arm with a white bar and works in the lower left hand quadrant.

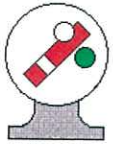
A semaphore arm on a white background at the horizontal position



A red or purple light at night

STOP :the signal must NOT be passed at the STOP position





White target revolves so that the semaphore arm is 45o below horizontal. Green light at night

PROCEED : the line ahead may be occupied

Drivers must be aware that they are entering a line which may be occupied. Proceed with Caution, being able to stop the train short of any obstruction.

Light Type Dwarf Signal

The light type version of the Dwarf signal is a two aspect signal using the same lens.

Light Type Dwarf at STOP



A red light for day and night
A purple aspect is also used to show **STOP**

STOP : The signal must NOT be passed at the STOP position



STOP : The signal must NOT be passed at the STOP position

Light Type Dwarf at PROCEED



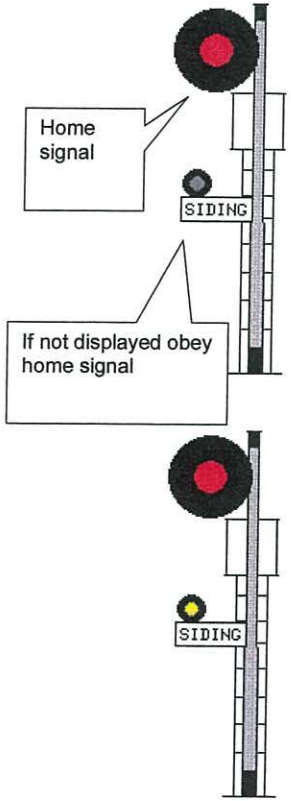
A green light by day and night.

PROCEED : the line ahead may be occupied

Drivers must be aware that they are entering a line which may be occupied. Proceed with caution, being able to stop the train short of any obstruction.

Dwarf Signals on the Same Post as a Home Signal

A two position Dwarf signal can be positioned on the same post as a Home signal. The Dwarf signal will be provided for movements into sidings.
Both the Home and Dwarf signal will be light type signals.
On the signal post, beneath or to the side of the Dwarf, is a sign clearly indicating the word **SIDING**.



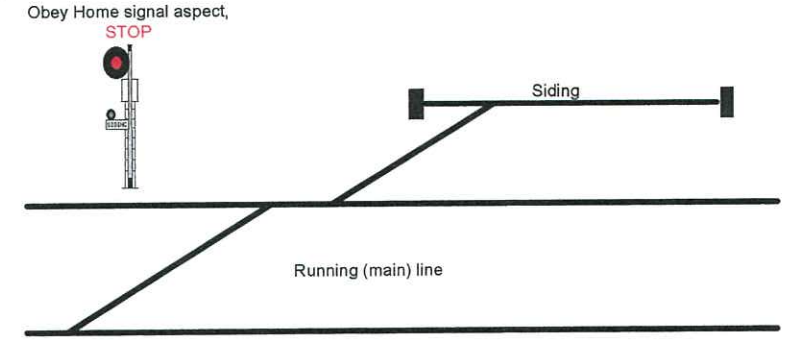
NORMAL
In the NORMAL position, the two position Dwarf signal will not be illuminated. You must obey the Home Signal aspect.

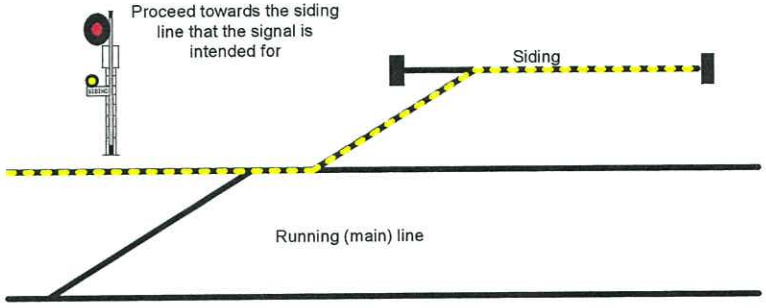
PROCEED
A **yellow** light in the Dwarf signal. Proceed into the siding that the signal is provided for.
Drivers must be aware that they are entering a line which may be occupied. Proceed with caution, being able to stop the train short of any obstruction.

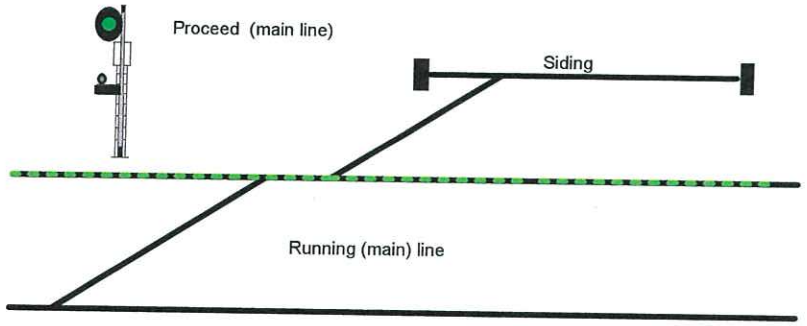
It must be understood that the difference between the Calling - On signal and a Dwarf signal on the same post is:

- The Dwarf signal applies to the siding only
- The Calling - On signal applies to the same line as the Home signal immediately above it

Examples of Train Movements by Dwarf Signals







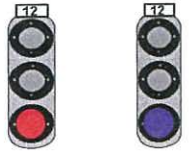
THREE POSITION DWARF

All Dwarf signals in the core area are light type signals only.

The light type Dwarf signal may have one, two or three lights through which the signal aspects are displayed.

Indications

Three indications can be displayed by a three position Dwarf signal.

STOP The signal must NOT be passed at the STOP position	A red or purple light is displayed.	
LOW SPEED CAUTION The points are set for the movement The track may or may not be occupied The Driver may proceed being prepared to stop the train short of any obstruction The maximum speed must not exceed15 km/h	A yellow light is displayed.	
CLEAR LOW SPEED The points are set for the movement The track is clear to the next fixed signal The next fixed signal is showing a proceed aspect The maximum speed must not exceed 15 km/h	A green light is displayed	

EXCEPTIONS TO PASS DWARF SIGNALS AT STOP

Dwarf signals are used to regulate the passage of trains between sidings, running lines and shunting operations.

They must not be passed at the STOP position.

There are two exceptions to pass Dwarf signals at the STOP position, they are:

- Defective
- Single Line Working

Defective - When the Signal Is Defective And The Signaller Gives The Authority

The Competent Employee in charge of any train movement governed by a defective Dwarf signal must communicate verbally with the Signaller to ensure the points are properly set as authorised by the Signaller.
Alternatively the Hand Signaller must signal for the defective signal.

Single Line Working

When authorised by the Pilot to enter the section where the traffic of a double line is being worked over a single line during repairs or obstruction.
Before entering the single line each Driver must be advised by the Pilot as to the exact location where the Single Line Working is operational.
This does not apply to trains leaving a single line section.
The Pilot cannot authorise the Driver to pass the signal governing the exit from the single line section at the STOP position.

SUMMARY

- What is the purpose of the Dwarf signal?
- What are the aspects of a two position Dwarf signal?
- What are the aspects of a three position Dwarf signal?
- What are the exceptions for passing Dwarf signals at the STOP position?

SESSION OBJECTIVES

At the end of this session according to the Rules and Operating Procedures, WTT Appendix, relevant circulars and instructions, the Learner will be able to:

a. State the speed limits on the Northern Group of lines

GENERAL INSTRUCTIONS

Drivers must regulate the running of the train to ensure the authorised speed is not exceeded.

Track speeds as well as speed restrictions found in the Working Timetable Appendix, Special Instructions, Circulars and Weekly Operational Notice must be strictly observed.

The Driver must also obey speed restrictions displayed on all curve and speed boards as well as fixed signal indications.

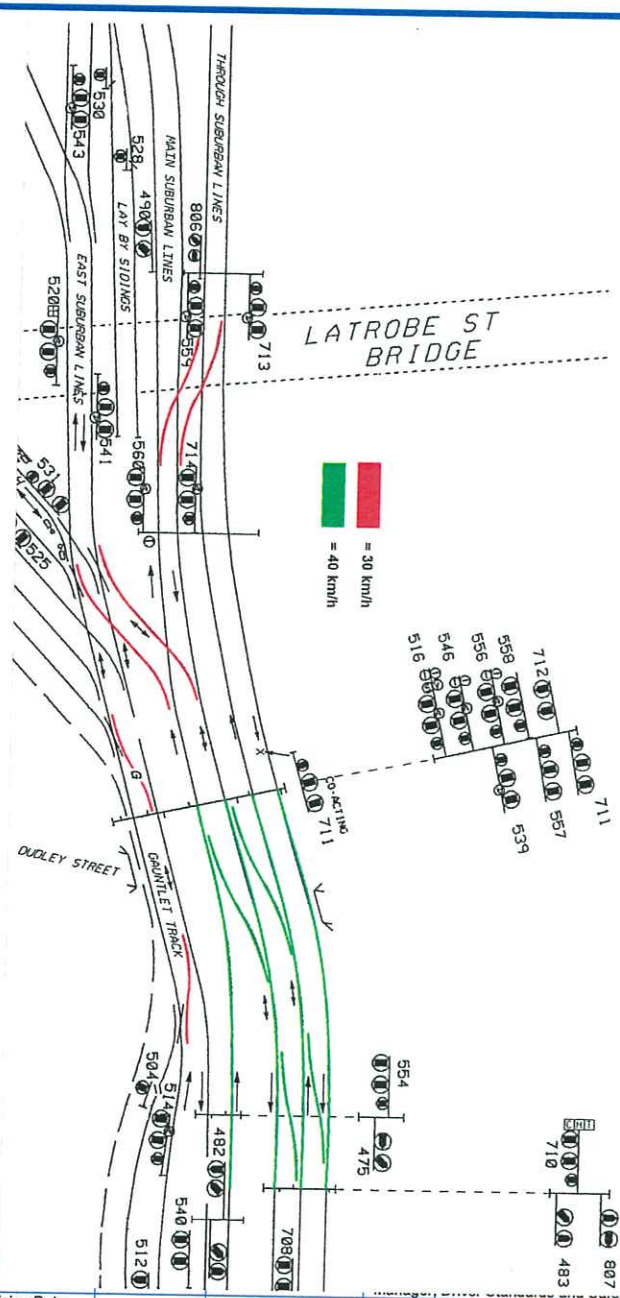
Should the train have no timetable to adhere to, the train must be run at the maximum permissible track speed but with regard to all other restrictions governing the speed of the train.

NOTE: Speed limits for each section of line will be found in the WTT Appendix

Alterations to speed limits, ie temporary or permanent speed restrictions are printed in the Weekly Operational Notice, in Circulars and WTT Amendments.

Generally the speed over points is normal track speed on the straight track and 40 km/h when diverging but at certain locations different speeds apply and these are published in the WTT Appendix.

It must be clearly understood by Train Crew personnel that the maximum permissible speed for the line and for the type of train must not, under any circumstances, be exceeded over any portion of the journey.



NORTHERN GROUP SPEEDS

Flinders Street To Southern Cross

ROUTE	SPEED LIMIT
Flinders Street to the viaduct	25 km/h
Clifton Hill loop viaduct line	35 km/h
Burnley loop viaduct line	35 km/h
Northern loop viaduct line	40 km/h
Caulfield loop viaduct line	40 km/h
Through Suburban viaduct lines	40 km/h

Southern Cross to North Melbourne Junction

Southern Cross to North Melbourne Junction	65 km/h
Viaduct Junction to Melbourne Yard via Main Goods line	40 km/h
Between signal bridge with signals 711, 557, 539, 516, 546, 556, 558 & 712 and signal bridge with signals 807, 483 & 710 on Main and Through Suburban lines (on straight or diverge). Permanent speed boards provided. (See diagram left page)	40 km/h
All other diverging points in Franklin St area between signal bridge with signals 713, 559 & 806 and signal bridge with signals 807, 483 & 710 (See diagram left page)	30 km/h

Underground Loop

ROUTE	SPEED LIMIT
Northern Underground loop line	60 km/h

North Melbourne Junction to Upfield

ROUTE	SPEED LIMIT
North Melbourne Junction to Upfield	80 km/h

North Melbourne Junction to Craigieburn

ROUTE	SPEED LIMIT
North Melbourne Junction to Newmarket Junction	65 km/h
Newmarket Junction to Essendon	80 km/h
Essendon Station between post 8 and 38	55 km/h
Essendon to Broadmeadows	80 km/h
Broadmeadows to Craigieburn	115 km/h

Newmarket Junction to Flemington Racecourse

ROUTE	SPEED LIMIT
Newmarket Junction to Flemington Racecourse	40 km/h

North Melbourne Junction to Sunbury

ROUTE	SPEED LIMIT
North Melbourne Junction to Sunshine	80 km/h
Sunshine to Albion	70 km/h
Albion to St. Albans	95 km/h
St. Albans to Watergardens	110 km/h
Watergardens to Sunbury	115 km/h

North Melbourne Junction to Werribee

ROUTE	SPEED LIMIT
North Melbourne Junction to Altona Junction	80 km/h
Altona Junction to Altona	65 km/h
Altona to Laverton Junction	80 km/h
Altona Junction to Laverton Junction via Main line	115 km/h
Laverton Junction to Werribee	115 km/h

Newport to Williamstown

ROUTE	SPEED LIMIT
Newport to Williamstown	80 km/h
Newport to Newport Workshops or Newport Sidings (day or night)	15 km/h in clear weather 10 km/h in foggy weather

SUMMARY

Where are track speeds published?

Where are track speed restrictions published?

What are the Driver's duties with regards to speed limits during the running of the train?

What are the speed limits on the Upfield line?

What are the speed limits on the Craigieburn line?

What are the speed limits on the Sunbury line?

What are the speed limits on the Werribee line?

What are the speed limits on the Williamstown line?

Module 39 Session 2
Track Maintenance Protection
Learner's Notes

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MODULE AIM

The aim of this lesson is to provide the learner with instruction on Permanent Way Signalling signs and their locations

SESSION OBJECTIVES

At the end of this session the learner will be able to:

a. Describe the hand signals used in track maintenance protection.
b. Describe the defined areas for track maintenance protection.
c. State how protection is provided in the defined country area.
d. State how protection is provided in the defined suburban area.
e. State how protection is provided in the defined inner suburban area.
f. State the duties of the Driver of the approaching train.
g. State how protection is provided when the track is not obstructed.
h. State how irregularities concerning track maintenance work are reported.

METRO RISK

From time to time it is necessary to advise Drivers of a restriction in the normal speed that a train can travel. It is also necessary to advise Drivers that work on the infrastructure is being carried out while trains are running. Special rules to protect staff working on or near the line can be put in place and signage can be used to inform Drivers to reduce speeds. During this degraded operation, Drivers must be aware of the correct procedures to follow and to remain vigilant. Failure to adhere to these instructions could result in a train making contact with the workforce or a train travelling too fast over a portion of line that has a temporary speed restriction. This could result in a train accident.

INTRODUCTION

Railway tracks and the land adjacent to them are often referred to as the "permanent way."

When there is a requirement to work on the permanent way, or the workers' safety may be affected, Permanent Way Signs and/or Track Maintenance Protection are used to regulate the speed of trains if it is necessary for trains to travel at reduced speed for brief or extended periods.

Track Maintenance Protection is used where urgent, non-scheduled repairs are undertaken. Where time allows, the arrangements are advertised in the Weekly Operational Notice (WON). Note that for more urgent repairs there may not be sufficient time to be included in that weeks notice.

Track Maintenance Protection makes use of flag signallers and Audible Track Warning Signals (ATW's) to attract the attention of Drivers and varies in its application in accordance with the location of repairs being done. It is used for short periods while a gang is working.

Drivers must be especially alert when passing over areas of speed restriction due to track repairs, keeping a sharp lookout for workers on or near the line, machinery, objects left on the rail, vehicles too close to the track or track defects.

WHEN TRACK PROTECTION IS REQUIRED

Protection must be provided:

- Before maintenance works beginning on or within three metres of the track
- Before any track machine is placed on the track
- Before a ballast or other maintenance train remains stationary or moving slowly on a running line
- Before a rail is removed or re-laid
- Before an obstruction is placed on a running line

- When the line is unsafe due to natural or other causes
- Where workers cannot get to a position of safety.
- Where required by an asset owner if mobile plant is operated near overhead wires

WEEKLY OPERATIONAL NOTICE

The Weekly Operational Notice is issued to all Drivers. You must read these notices as they hold important information regarding planned engineering work, temporary and permanent changes to the infrastructure.

The Weekly Operational Notice is issued every Tuesday.

An acknowledgement of its receipt is not necessary.

Every person whose duty requires them to have a copy is held responsible for obtaining one of each issue and complying with any instructions applicable to them. If not received at the usual time or in doubts to your obligations, contact your Supervisor.

The following general instructions apply and are found on the first page of the WON.

Example of the notification of a temporary speed restriction

TEMPORARY SPEED REDUCTIONS
VICTORIAN COUNTRY RAIL NETWORK

As From	Stations Between	km Start	km End	TSR Speed	Circular	Reason	Estimated Removal Date
SOUTH WESTERN							
Geelong - Warrnambool Line							
9/07/2012	Geelong - Marshall	76.900	77.000	70	TS0092/12	Track condition	31/12/2012
22/02/2008	Marshall - Winchelsea	90.049	90.849	90	TS0048/08	Line of sight problems for UP trains only at Pettavel Road level crossing.	31/12/2014
22/02/2008	Colac - Camperdown	158.479	158.893	80	TS0050/08	Line of sight problems for UP trains only at Pound Road level crossing.	31/12/2012
20/02/2012	Marshall - Warrnambool	198.100	198.850	30	TS0025/12	No. 1 Road Camperdown Yard, track condition.	20/03/2012
3/11/2011	Camperdown - Warrnambool	240.800	240.900	50	TS0105/11	Track condition at bridge.	30/06/2012

HAND SIGNALS USED FOR TRACK MAINTENANCE PROTECTION

RED SIGNAL

The red signal is a red flag by day or a red light by night held steady in the hand and indicates STOP

YELLOW SIGNAL

The yellow signal is a yellow flag by day or a yellow light by night held steady in the hand and indicates WARNING.

GREEN SIGNAL

The green signal is a green flag by day or a green light by night. When held steady in the hand, it indicates ALL CLEAR and the Driver may proceed at normal speed.

GREEN SIGNAL WAVED SLOWLY

If it is waved slowly side to side, it indicates CAUTION and the Driver must not exceed 25km/h. If the flag signaller needs the Driver to proceed at a slower speed, the flag signaller will stop the Driver and inform them of the required speed before waving the green signal side to side.

EMERGENCY STOP SIGNAL

This is indicated by raising both hands above the head by day or by waving any light violently by night

ALL RIGHT SIGNAL

This is indicated by facing an oncoming train and raising one arm horizontally. It **must not** be given unless the person giving the signal is clear of the track and in a position of safety

DEFINED AREAS FOR TRACK MAINTENANCE PROTECTION

The defined areas for Track Maintenance Protection are the Country, Suburban and Inner Suburban areas.

COUNTRY AREA

The **country area** commences at the Down end of Altona Junction via the East and West lines, St Albans, Broadmeadows, Dandenong and Frankston.

SUBURBAN AREA

The **suburban area** is defined as follows:

- From the Up end of Richmond to the Up Home signals at Dandenong, Frankston and Sandringham
- From the Up end of North Melbourne to the Up Home signals at Broadmeadows, Upfield, St Albans, Williamstown, Laverton holding Loop via Westona

The **suburban area** also includes the Up and Down main goods line between Southern Cross and Melbourne Yard Stabling Sidings

INNER SUBURBAN AREA

The **inner suburban area** is bounded by the Up end of Richmond, the Up end of North Melbourne and the Up end of Jolimont.

TRACK MAINTENANCE PROTECTION IN THE COUNTRY AREA

OUTER FLAG SIGNALLER

2,000 to 4,000 Metres

The outer flag signaller must place 3 ATWS, 10 metres apart, on one rail of the line between 2,000 and 4,000 metres from the point of work. Once that has been done, the Flag Signaller must display a yellow hand signal.

Third Fixed Signal within 2,000 Metres

In automatic signalling areas, it is not necessary for the outer flag signaller to go past the third signal in the rear of the obstruction even if it is less than 2,000 metres from the point of work. At the third signal, the Flag Signaller must place 3 ATWS on one rail of the line and display a yellow hand signal.

Signal Box within 2,000 Metres

If there is a signal box less than 2,000 metres from the point of work, the Flag Signaller must instruct the Signaller to keep the appropriate signals at Stop and place 3 ATWS on one rail of the obstructed line.

INNER FLAG SIGNALLER

The inner flag signaller must stand 200 metres from the point of work and may exhibit a red hand signal, a steady green hand signal or a green hand signal waved slowly from side to side as required.

TRACK MAINTENANCE PROTECTION IN THE SUBURBAN AREA

OUTER FLAG SIGNALLER

1200 Metres

The outer flag signaller must place 3 ATWS, 10 metres apart, on one rail of the line 1200 metres from the point of work. The Flag Signaller must also display a yellow hand signal.

Third Fixed Signal within 1200 Metres

In automatic signalling areas, it is not necessary for the outer flag signaller to go past the third signal in the rear of the obstruction even if it is less than 1200 metres from the point of work. At the third signal, the Flag Signaller must place 3 ATWS on one rail of the line and display a yellow hand signal.

Signal Box within 1200 Metres

If there is a signal box less than 1200 metres from the point of work, the Flag Signaller must instruct the Signaller to keep the appropriate signals at Stop and place 3 ATWS on one rail of the obstructed line.

INNER FLAG SIGNALLER

The inner flag signaller must stand 200 metres from the point of work and may exhibit a red hand signal, a steady green hand signal or a green hand signal waved from side to side as required.

TRACK MAINTENANCE PROTECTION IN THE INNER SUBURBAN AREA

OUTER FLAG SIGNALLER

The outer flag signaller must stand two signals in the rear of the point of work and display a yellow hand signal. ATWS are not used in the inner suburban area.

INNER FLAG SIGNALLER

The inner flag signaller must stand **100 metres** from the point of work and may exhibit a red hand signal, a steady green hand signal or a green hand signal waved from side to side as required.

DUTIES OF DRIVERS OF APPROACHING TRAINS

REDUCE SPEED AND BE PREPARED TO STOP

If the Driver of an approaching train hears the explosion of ATWS and/or sees a Flag Signaller displaying a yellow signal, the Driver must reduce the speed of the train, sound a long whistle, press the memory aid button and be prepared to stop and await further guidance from the Inner flag signaller.

The Inner Flag Signaller will signal the train to proceed by displaying a steady green signal or by waving a green signal slowly from side to side if a reduced speed of 25 km/h is required.

If a lower speed is required, Drivers will be stopped and verbally informed. The hand signaller will then wave a green hand signal slowly from side to side. Drivers must continue to observe the Inner flag signaller until a steady green hand signal indicates that the train may resume normal speed. Drivers must be especially alert when passing over areas of track repairs.

MEMORY AID DEVICES

Memory aid devices are installed in the Driver's cab of all electric multiple unit trains. When activated, the device provides a slow flashing yellow light and an audible beep at approximately 10 second intervals.

When Audible Track Warning Signals are exploded and/or an outer flagman is passed, the Driver must press the memory aid button to remind the Driver of the presence of personnel or an obstruction.

When the Driver receives the ALL CLEAR hand signals from the flag signaller, the memory aid device may be pressed again to cancel the light and tone.

NOTE: Any malfunction of the Memory Aid Device must not cause the train to be delayed or cancelled and must be reported in the normal manner by submitting a Train Malfunction Message.

USE FOR OTHER SAFEWORKING REQUIREMENTS

The memory aid device may also be used to assist memory for other safeworking requirements not defined in this instruction.

Other safeworking requirements may include, eg:

- When passing Automatic Signals at STOP
- Temporary speed restrictions
- After arriving at a station when the previous signal was displaying a warning aspect and the signal ahead is not in clear view, eg:
  - Laverton Platform 2, Down direction
  - Carrum Down Platform 2

TRACK NOT OBSTRUCTED – WORKERS NEAR THE LINE

The person in charge of the workers must arrange for a Lookout to give a warning to them on the approach of a train, particularly where the view is obstructed. The Lookout must be within earshot of the workers.

The Driver, on sighting the Lookout or workers must sound the whistle. The Lookout will give an All Right hand signal to indicate that the work party is aware of the approaching train. If no All Right hand signal is given, the Driver must sound the whistle again and reduce speed.

REPORTING IRREGULARITIES

Any time a Driver observes workers on or near the track in circumstances where their safety is compromised by lack of protection as required by the Book of Rules and Operating Procedures it should be reported via the train radio to the Train Controller.

NOTE: Any time a Driver explodes ATWS, which have been left on the line it must be reported via the train radio to the Train Controller. The Driver should sound the whistle and proceed cautiously.

ASK YOURSELF

What hand signals are used in track maintenance protection?

What are the defined areas for track maintenance protection?

How is protection provided in the defined country area?

How is protection provided in the defined suburban area?

How is protection provided in the defined inner suburban area?

What are the duties of the Driver of the approaching train?

How is protection provided when the track is not obstructed?

How are irregularities concerning track maintenance work reported?

END OF SESSION

METRO	EMU PREPARATION SAFETY	
L2-TSD-PRO-018	Version: 1	Effective from: 8th November 2012

Approval

	Name	Position	Signature
Document Author	Peter Boyle	Train Driver Manager, Fleet Standards	
Document Endorsers	Alan Clifford	General Manager Rolling Stock	
	Perry Ramsey	Manager Train Service Delivery	
Approving Manager	Michael Houghton	Chief Operating Officer	

Amendment Record

Approval Date	Version	Description
08/11/2011	1	First issue Metro. This version supersedes: • L3-TSD-PRO-008 Safety Awareness Train Preparation Please dispose of all copies This version introduces: • Additional responsible staff • Log Book procedures • Macaulay to list of limited preparations • Driver placing red flag in step flag holder for duration of preparation

1. Purpose

This procedure is to detail the equipment and procedures to ensure the safety of the environment and all personnel working on or around EMU trains during the Driver preparation.

2. Scope

It covers all locations, train and preparation types.

It also lists locations where, for various reasons, a complete preparation is not possible on one or both sides of a train.

3. Abbreviations and Acronyms

- EMU Electric Multiple Unit
- FMP Fault Management Procedure
- TDN Train Describer Number
- TMM Train Malfunction Message

4. Responsibilities

- Train Drivers and Trainee Train Drivers
- Maintenance Coordinators
- Train cleaning staff

5. Train Malfunctions

Malfunctions found by the Driver during a preparation must be reported by TMM in accordance with *Fault Management Procedure* and *Rectification of Faults Suburban Electric Trains.*

- If the fault is believed to be Critical it must be reported immediately.
- All other faults must be reported, but must not delay docking of the train.

6. Safety Devices and Signs

6.1 Before commencing a train preparation, the Driver must ensure that there are no signs displayed for the protection of employees working on the train.

6.2 Drivers must not start the preparation if any of these safety devices or signs are displayed, but must contact the Fleet Controller for advice.

6.3 These safety devices or signs can be, but are not exclusive to:

- Safety banners
- Red flags
- *Danger Men At Work* label in leading motor cab

6.4 The Driver must place a Red flag in the flag holder on the front steps at the departing end of the siding at the commencement of the preparation.

METRO	EMU PREPARATION SAFETY	
L2-TSD-PRO-018	Version: 1	Effective from: 8th November 2012

Note: Under no circumstances may a Driver raise any pantograph without first viewing the front of the train to check for safety devices. Wherever possible, the leading pantograph must be raised first.

6.5 If a yellow Car Cleaner's flag is displayed on the front step of the leading motor, the Driver must:

- Place the Car Cleaner's flag on the ground directly below the flag holder but not on the path
- Raise the pantographs and start the preparation normally
- Inform Car Cleaners that the train is being prepared and the time it is due to dock into service
- Release the saloon doors after raising the pantographs to allow Car Cleaners to exit the train
- Call Fleet Control if a yellow flag is displayed and no Car Cleaner's are evident

7. Driver Equipment that Must be Carried during a Preparation

7.1 During a train preparation the Driver must have in possession:

- Portable train radio
- All Driver's keys
- TMM book
- Torch

7.2 On arrival at the train, the Driver must enter the TDN into the portable train radio.

NOTE: The Driver must start preparation of a train at the motor from which the train is to be driven from the siding or platform.

7.3 In cases where the train is to be propelled from a siding, the preparation must be commenced from the end where the Competent Employee will be in position to protect the set back movement.

8. Log Book

8.1 As a safety measure to ensure correct train allocation, a log book is provided for each 3 car unit.

8.2 The log book must be kept in the leading cab of a 6 car consist or the highest motor number of a 3 car consist.

8.3 The log book must be filled in by each Driver at the completion of the train preparation stating the type of preparation, time, date and Driver name.

8.4 This information must be clearly written to enable other Drivers to ascertain the type of preparation required for that train later that day.

8.5 After a maintenance exam has been completed, the Maintenance Coordinator for that location must fill out the log book to state the type of examination the train has completed and that the train is safe to transfer to a suitable location for a Main Line Preparation.

9. Safety in Vicinity of Train Preparation

9.1 Staff working in the vicinity of trains must be mindful of possible train movements within the siding or along adjacent main lines.

9.2 Drivers normally prepare both sides of the train in accordance with train preparation instructions. At some locations this is not possible due to safety concerns and infrastructure obstructions.

9.3 Occasionally, due to unforeseen circumstances, one or both sides of a train to be prepared may also become inaccessible due to an obstruction (natural or otherwise). The Driver may be requested to prepare the unobstructed or neither side of a train.

9.4 These locations, both as defined in the table below and in unforseen circumstances, are treated as a Metro business risk.

NOTE: The Driver of a train docking from any platform or siding, where one or both sides of the train is not prepared, will not be held responsible for any mechanical condition or personal injury that arises.

9.5 Locations where One or Both Sides of a Train are not Prepared

9.5.1 At any location where a train is stabled in a platform track, the Driver will not be responsible for preparing the underframe equipment on the platform side of the train.

9.5.2 Where an unforseen obstruction to the preparation has occurred.

9.5.3 In addition, at the following locations, the side of the train listed must not be prepared because of:

- The danger of approaching or passing trains
- Limited access
- The absence of a screenings walkway
- Trackside obstacles

LOCATION	SIDING	SIDE NOT PREPARED
Belgrave	A Siding	Main line side
Burnley	3 Siding	Cleaning access platform side
Camberwell	A Siding	Both sides (walk through cars)
Caulfield	Up Caulfield Through Siding	Up main line side both trains
Dandenong	4 Track	Platform side
Flemington Race Course (Race Traffic Days)	2 & 3 Sidings	Platform side
Flinders Street	Any train stabled at a platform	Non-platform side
Frankston	1 & 2 Tracks	Non-platform side
	4 Siding	Platform side
Glen Waverley	3 Siding	Platform side
Lay-By Sidings	1 Siding	Down East Suburban line side
	2 Siding	Up Main Suburban line side

LOCATION	SIDING	SIDE NOT PREPARED
Lilydale	3 Track	Platform side
Macaulay Stabling Sidings	Siding 5, side adjacent to Siding 4 Siding 6, side adjacent to Siding 7 Siding 7,side adjacent to Moonie Ponds Creek	Manual trip test and reset not required a where the stair system prevents access to the trip
Melbourne Yard	4 Siding	B Side of trailing motor
Mitcham	A Siding	Up main line side
Newport	Altona Sidings	Up main line side
North Melbourne Stabling Sidings	1 & 8 Sidings	Cleaning access platform side
Oakleigh	B Siding	Down main line side
Ringwood	6 Siding	Up main line side
	4 Siding	Roadway side
Pakenham	3 Siding	Platform side
Sandringham	2 Siding	Platform side
Victoria Park	A Siding both trains	Up main line side

10. Records and Enquiry

Item	Retained by	Period of Retention
Development Folder	Train Driver Standards Officer	3 years
Obsolete master copies	Train Driver Standards Officer	6 years
Distribution lists	Train Driver Standards Officer	3 years

Enquiries about this document are to be directed to Train Driver Standards Officer TSD.

11. Related Documents

- Train Allocation and Preparation
- Rectification of Faults Suburban Electric Trains
- L1-TSD-PRO-003 Fault Management Procedure

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L2-TSD-PRO-019	Version: 1	Effective from: 8th November 2012

Approval

	Name	Position	Signature
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Approving Manager	Michael Houghton	Chief Operating Officer	

Amendment Record

Approval Date	Version	Description
08/11/2012	1	First issue Metro. This version supersedes: • cml-8.13-tsg-023 - Train Allocation and Preparation Please dispose of all copies.

1. Purpose

This work instruction details the process for allocation of trains for preparation and the type of preparation required before trains enter service.

2. Scope

It deals with all EMU types, preparation types, and all Metro docking locations

3. Abbreviations and Acronyms

- EMU Electric Multiple Unit
- POTS Position of Trains System
- DAO Driver Allocation Officers

4. Responsibilities

- Driver Allocation Officers
- Fleet Controllers
- Fleet Maintenance staff
- Signallers
- Station Staff
- Train Controllers
- Train Drivers and Trainee Train Drivers

5. Preparation Types

5.1 Post Maintenance Preparation

A Post Maintenance preparation is required when a train has completed a full scheduled maintenance exam in a workshop environment, major repairs ex collision and safety critical equipment or brake failure repairs.

5.2 Main Line Preparation

A Main Line preparation is the designated preparation for a train that will enter service or transfer via the main line for the first time that day or has not undergone a Post Maintenance preparation earlier that day, effective for the full service period of that train or up to 24 hours

5.3 Pre Movement/Revenue Preparation

A Revenue preparation is required prior to a train entering the Main Line for revenue service when the train has previously received a *Main Line preparation* or *Post Maintenance preparation* earlier that same day.

A Pre-movement preparation is required in lieu of a Post Maintenance or Main Line preparation under the following circumstances:

- A train is to be transferred between Melbourne Yard Stabling Sidings and the North Melbourne Wash Plant



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- At any other location when a train is to be moved but will not enter or foul a running line outside of defined station limits

6. Time Allowances for Train Preparations

6.1 Post-maintenance Preparation

- 58 minutes for a 6 car consist
- 29 minutes for a 3 car consist

6.2 Main Line Preparation

- 29 minutes for a 6 car consist
- 19 minutes for a 3 car consist

6.3 Pre-movement/Revenue Preparation

- 18 minutes for a 6 car consist
- 10 minutes for a 3 car consist

7. Trains Exiting Workshop

7.1 A pre-movement preparation is required when a train exits a workshop.

7.2 All trains exiting the workshop after the completion of a Scheduled Maintenance Examination will be required to transfer to a suitable siding where a Post Maintenance preparation must be completed prior to the train entering the main line.

7.3 Detailed preparation procedures are contained in the appropriate work instruction for each train type.

8. Train Allocation

8.1 Fleet Controllers will be responsible for recording the status of all trains in the fleet - in running, in maintenance facilities, or stabled in stabling sidings.

8.2 To ascertain the current status of the fleet, Fleet Controllers use the assistance of:

- The POTS identifying the location of units
- Station staff/Signallers at staffed outstation stabling locations advising motor numbers and sidings trains have been shunted to
- Drivers at unstaffed stabling locations advising the motor numbers and sidings trains have been shunted to.
- At Newport Workshops, the Metro Yard Coordinator or Leading Shunter/Yard Master
- Train Controllers keeping Fleet Controllers informed of transposals as they occur
- Such assistance to Fleet Controllers enables them to allocate trains for their next run according to requirements, for example, maintenance, washing or scheduled/unscheduled requirements such as divides

8.3 Once allocation of the train fleet has been completed for each of the AM and PM peaks of each day, the Fleet Controller will transmit all docking arrangements to the appropriate locations (Stations, Driver Depots and DAOs). Information contained is as follows:

- Location of dock
- Siding number
- Dock time
- TDN
- Motor numbers (lower motor number for each unit)

8.4 All train preparation times after the AM peak are automatically allocated a Pre-movement /Revenue preparation only. The Fleet controller must advise the DAO of any occasion when a train has not received either a Post Maintenance preparation or a Main Line preparation earlier that day.

8.5 Hand Back Times

8.5.1 The minimum time for handover from maintenance control for trains to be prepared is 1 hour before train register time, excepting MYD, NMS and MSS which are 1.5 hours. This is to allow for communication between the Fleet Maintenance, Fleet Controllers, DAO, and Drivers, and for a Main Line preparation to be carried out.

8.5.2 Any train being handed back ex maintenance exam in a workshops environment must be allocated 1.5 hours before train register time. This is to allow for communication between the Fleet Maintenance, Fleet Controllers, DAO, and Drivers, and for a Post Maintenance preparation to be carried out.

8.6 On weekdays, PM docking arrangements are to be transmitted to the DAOs. Subsequent alterations or additional docks are to be clearly communicated to the DAOs by telephone.

8.7 For a PM dock requiring a Main Line preparation, the Fleet Controller is responsible for advising the DAO who will make the necessary arrangements to ensure that the train undergoes a Main Line preparation prior to entering service.

8.8 Station Staff/Signallers at staffed stabling locations, will be required to take note of docking arrangements and display information as per section 8.3 in the Driver's sign on area for Drivers to read when signing on to dock trains.

8.9 DAOs will take note of docking arrangements at unstaffed locations and ensure that the information as per section 8.3 is forwarded to Drivers.

8.10 Drivers will note location and car numbers before proceeding to sidings to prepare trains for service.

8.11 If allocation is not possible by the time a Driver is due to travel to a docking location, they may be directed to travel to that location and on arrival contact the DAO for confirmation of all further allocation details as per section 8.3 **before the preparation may be commenced**.

NOTE: Trains are not to be allocated whilst still in control of Fleet Maintenance. If there is a requirement for Fleet Controllers to give planned information to the DAO, the information is to be restricted to location only, with further information to follow.

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9. Records and Enquiry

Item	Retained by	Period of Retention
Development Folder	Train Driver Standards Officer	3 years
Obsolete master copies	Train Driver Standards Officer	6 years
Distribution lists	Train Driver Standards Officer	3 years

Enquiries about this document are to be directed to Train Driver Standards Officer TSD.

10. Related Documents

- L3-TSD-WOI-004 Siemens Main Line Preparation
- L3-TSD-WOI-006 Comeng Main Line Preparation
- L3-TSD-WOI-017 X'Trapolis Main Line Preparation
- L3-TSD-WOI-027 Comeng Post Maintenance Preparation
- L3-TSD-WOI-030 Hitachi Main Line Preparation
- L3-TSD-WOI-031 Hitachi Post Maintenance Preparation
- L3-TSD-WOI-034 Siemens Post Maintenance Preparation
- L3-TSD-WOI-035 Siemens Pre-movement/Revenue Preparation
- L3-TSD-WOI-038 X'Trapolis Post Maintenance Preparation
- L3-TSD-WOI-039 X'Trapolis Pre-movement/Revenue Preparation
- L3-TSD-WOI-040 Comeng Pre-movement/Revenue Preparation
- L3-TSD-WOI-041 Hitachi Pre-movement/Revenue Preparation

Approval

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Document Endorsers	Jim Dimitrioski	Manager Network Operations	
	Perry Ramsey	Manager Train Service Delivery	
Approving Manager	Michael Houghton	Chief Operating Officer	

Amendment Record

Approval Date	Version	Description
08/11/2012	1	First issue Metro. This version supersedes: • Dividing procedures contained in cml-8.13-mo-043 - Dividing and Attaching Comeng Trains at Flinders Street Platforms Please dispose of all copies. This version introduces: • Comprehensive revision of EMU dividing procedures • Additional centre motor tests after dividing

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1. Purpose

This work instruction describes Driver duties and procedures for dividing EMU trains to form two separate three car trains.

2. Scope

Comeng, Siemens and X'Trapolis trains in platforms or in sidings. Hitachi in sidings only.

3. Abbreviations and Acronyms

- FMP Fault Management Procedure
- PIDS Passenger Information Display System

4. Responsibilities

- Train Drivers and Trainee Train Drivers
- Station staff

5. Process

5.1 At all times when dividing suburban electric trains, the following procedures must be complied with:

- When changing ends, Drivers must carry out the changing ends procedure, as required in work instruction *Changing Ends*
- When leaving a cab unattended, Drivers must carry out the full cab unattended procedure, as required in procedure *Cab Unattended Procedure*
- If it is necessary to enter the pit for any reason during dividing or attaching trains, procedure *Train Drivers and/or Fleet Maintenance Staff Entering the Track/Pit at any Location with Adjacent Running Lines* must be adhered to
- In the event that Station staff are not in attendance, or the station is under Driver In Charge conditions, the Driver must ensure all passengers have left the train prior to dividing

NOTE: On Siemens and X'Trapolis trains, two controller/master keys must not be inserted and cabs activated at the same time during the divide.



6. Dividing all Train Types at Platforms

6.1 Station Staff

6.1.1 Ensure the platform PIDS displays 'Train Not Taking Passengers' (where available).

6.1.2 Make appropriate platform announcements to advise passengers to detrain and not board the train until further advised.

6.1.3 Station staff must be in position for the arrival of the train and check from the rear car to the centre motor, to ensure that all passengers have left the train and advise the dividing Driver accordingly.

6.2 Arriving Driver

6.2.1 Stop the train 1 metre short of the 6 car stopping mark.

6.2.2 Make an on-train PA announcement advising passengers to detrain and listen for further platform announcements.

6.2.3 Comeng & Hitachi

Apply and isolate the automatic air brake, place reverser to OFF and remove controller key and ensure train line park brakes are APPLIED and trip is RAISED.

6.2.4 Siemens

Move the master controller to B6, master selector switch to NEUTRAL, remove the Siemens Master Key and ensure park brake switch is illuminated.

6.2.5 X'Trapolis

Move the master controller to COAST, reverser to NEUTRAL and remove controller key.

6.2.6 Remain in the cab and:

6.2.6.1 Be ready to receive the dividing Drivers request to set the train back

6.2.6.2 Signal to the dividing Driver for the set back movement.

6.2.6.3 Protect the set back movement.

6.3 Station Staff

6.3.1 Inform the dividing Driver that all passengers have detrained.

6.4 Dividing/Relief Driver

6.4.1 Be in position at the 6 car mark of the arriving train.

6.4.2 Confer with the arriving Driver regarding the intended divide.

6.4.3 Detrain all passengers on the first unit as you walk towards the centre motor.

6.4.4 Enter the centre cab on the arriving trains leading unit.

6.4.5 Close saloon doors.

7. Comeng Uncoupling Procedure

7.1 Ensure train line park brakes are applied.

7.2 Open the BVICS, commence charging the brake pipe.

7.3 Lower the trip when the brake pipe rises to 500 kPa or above.

7.4 Ensure trip will not reset on its own, continuous blow of air is heard to be coming from the trip and brake pipe does not charge. Brake Pipe pressure must reduce to 150 kPa ± 20 kPa.

7.5 Reset trip and charge brake pipe.

7.6 Release **LOCAL** park brake.

7.7 Release EP brake.

7.8 Move reverser to FORWARD.

7.9 Apply power in NOTCH 1.

NOTE: Drivers should expect some movement, but should not allow the attached unit to be pushed along the track as the couplers bunch together.

7.10 Place brake controller to STEP 7 of EP Brake whilst the couplers are bunched, ensuring brake cylinder pressure rises. The EP brake will hold the train in a bunched position and allow the Driver to place the master controller to OFF.

7.11 Move brake controller to EMERGENCY and ensure the brake pipe reduces to 0 kPa.

7.12 Press the train lined park brake ON button.

7.13 Place the reverser to NEUTRAL.

7.14 Press the uncouple buttons simultaneously for a minimum of 5 seconds.

7.15 Ensure the longitudinal lugs on top of the coupler go to INCLINED and the electrical doors retract fully.

NOTE: If the train will not divide ask a second Driver to assist, if available, by pressing the uncouple buttons in the attached centre motor cab simultaneously.

7.16 Press the bell button 3 times to signal a reversing movement.

7.17 Wait for the other Driver to repeat back 3 bells in to acknowledge that the reversing movement is safe to commence.

7.18 When 3 bells have been received, move the reverser to REVERSE and set back a sufficient distance, but no more than 1 metre.

NOTE: If for any reason communication is not available, the dividing Driver must change ends and drive the unit off to separate the units

7.19 Set up cab for direction of travel.

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8. Siemens Uncoupling Procedures

8.1 Activate the cab.

8.2 Ensure the park brake switch is illuminated.

8.3 Ensure brake cylinder gauge shows emergency pressure.

8.4 Press the uncouple button.

8.5 Communicate with the other Driver using Cab to Cab Button and advise of intention to set back no more than 1 metre.

8.6 On acknowledgement that the reversing movement is safe to commence, move the reverser to REVERSE and set back no more than 1 metre.

NOTE: If for any reason communication is not available, the dividing Driver must change ends and drive the unit off to separate the units

8.7 Set up cab for direction of travel.

9. X'Trapolis Uncoupling Procedures

9.1 Activate the cab.

9.2 Ensure brake cylinder gauge shows emergency pressure.

9.3 Press the uncouple button.

9.4 Ensure the longitudinal lugs on top of the coupler go to INCLINED and the electrical doors retract fully.

9.5 X'Trapolis Trains Fitted with Digital Driver's Display Unit

9.5.1 Communicate with the other Driver using Cab to Cab Button and advise of intention set back no more than 1 metre

9.5.2 On acknowledgement that the reversing movement is safe to commence, move the reverser to REVERSE and set back no more than 1 metre and remove controller key

NOTE: If for any reason communication is not available, the dividing Driver must change ends and drive the unit off to separate the units

9.5.3 Set up cab for direction of travel

9.6 X'Trapolis Fitted with Original (unmodified) Driver's Display Unit

9.6.1 Communicate with the other Driver that the divide is complete by indicating an ALL RIGHT hand signal. The other Driver must then use the appropriate hand signals to set the train back no more than 1 metre.

NOTE: If for any reason communication is not available, the dividing Driver must change ends and drive the unit off to separate the units

9.6.2 Set up cab for direction of travel.

9.6.3 Remove controller key.

NOTE: If the train will not uncouple, place the emergency trainset mode switch to POSITION 1 (ON LINE HOLDING BRAKE INHIBIT), apply forward traction power whilst simultaneously pressing the uncouple button. After successfully dividing the train, place the emergency trainset mode switch to POSITION 2 (NORMAL).

10. Dividing Train in Sidings

10.1 Comeng, Siemens and X'Trapolis

10.2 As per sections 6, 8 and 9, with the exception that the arriving Driver carries out the divide process.

10.3 The open portion must be driven off the other unit.

NOTE: The Driver must ensure the other unit is stabled as per procedure Stabling EMU Trains.

NOTE: In all circumstances the Driver must confirm that park brakes are applied on the other unit. On Comeng trains this must be done by checking both cabs.

10.4 Hitachi

10.4.1 Pre Divide Checks

10.4.1.1 The Driver must first ensure on both units that the:

- Park brakes are applied
- BVICS is isolated

NOTE: All motor alternators must be off to prevent arcing as it may cause injury when the 38 core jumper cable is removed from its socket.

10.4.2 Stopping Motor Alternators

10.4.2.1 To stop all motor alternators, you must press the remote pantograph lower button on the Driver's console and by observation ensure that all pantographs have lowered.

10.4.2.2 After allowing time for the motor alternators to cease electrical output, observe the AC supply light extinguishes to ensure that power has gone off.

10.4.2.3 After completing the preparations to divide the train, the following items are required to be operated:

- 38 core jumper cable
- Main reservoir and brake pipe hoses
- Automatic couplers

10.4.3 Removal Of The 38 Core Train Cable

To uncouple the 38 core jumper cable, the Driver must:

- Slacken the locking screw
- Move locking cradle clear of jumper cable head

- Remove jumper cable from the socket
- Secure jumper cable in its dummy socket
- Close the jumper cable socket lid
- Secure socket lid with locking cradle and locking screw

10.4.4 Main Reservoir and Brake Pipe Hoses

To uncouple the hoses, the Driver must

- Close the relevant main reservoir and brake pipe end cocks on both centre motors
- Uncouple the main reservoir and brake pipe hoses
- Connect them to their respective dummy couplings

10.4.5 Automatic Coupler

To uncouple the automatic coupler, the Driver must:

- Remove the locking pin from the lifting pin
- Operate the lifting pin on the automatic coupler

If the lifting pin on the coupler cannot be lifted, an EASE UP movement may be required.

NOTE: After the EASE UP movement, the brake must be again applied and isolated and the park brake must be reapplied before reattempting to lift the lifting pin.

NOTE: The Driver must ensure the other unit is stabled as per procedure Stabling EMU Trains.

NOTE: In all circumstances the Driver must confirm that park brakes are applied on the other unit by checking both cabs.

10.4.6 Separating Units

After completing the dividing procedure, the units must now be separated by approximately one to two metres.

NOTE: Hitachi trains must not be divided or attached at platforms except in case of emergency

11. Inspections and Tests to be Carried Out in Both Centre Motors

To be completed by the dividing Driver on one portion and the relief Driver on the other portion.

11.1 Comeng

11.2 Carry out cab visual inspections and full inspection tests as previously described in the work instruction *Comeng Post Maintenance Preparation.*

11.2.1 Brake Tests

- Conduct EP Brake Test as per the work instruction *Comeng Brake Controller Tests*
- Conduct Automatic Air Brake Test as per the work instruction *Comeng Brake Controller Tests*

11.2.2 Safety Apparatus Tests

- Conduct Hand/Foot Pilot Valve & Control Governor Tests as per the work instruction *Comeng Safety Apparatus Tests*
- Conduct Full Trip Apparatus Tests as per the work instruction *Comeng Safety Apparatus Tests* only when the train divides in a siding
- Conduct VICERS Tests as per the work instruction *Comeng Safety Apparatus Tests*

11.3 Hitachi

11.4 Carry out cab visual inspections and full inspection tests as previously described in the work instruction *Hitachi Post Maintenance Preparation*.

11.4.1 Brake Tests

- Conduct Full EP Brake Test as per the work instruction *Hitachi Brake Controller Tests*.
- Conduct Automatic Air Brake Test as per the work instruction *Hitachi Brake Controller Tests*.

11.4.2 Safety Apparatus Tests

- Conduct Hand/Foot Pilot Valve & Control Governor Tests as per the work instruction *Hitachi Safety Apparatus Tests*
- Conduct Full Trip Apparatus Tests as per the work instruction *Hitachi Safety Apparatus Tests* (where fitted)

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11.5 Siemens

11.6 Carry out cab visual inspections and full inspection tests as previously described in the work instruction *Siemens Post Maintenance preparation.*

11.6.1 Brake Tests

- Conduct a brake test as per the work instruction *Siemens Brake Controller Tests*

11.6.2 Safety Apparatus Tests

- Conduct a Traction Cut Out Test as per the work instruction *Siemens Safety Apparatus Tests*
- Conduct a Vigilance Device Tests as per the work instruction *Siemens Safety Apparatus Tests*
- Conduct a Full Trip Apparatus Test as per the work instruction *Siemens Safety Apparatus Tests*

11.7 X'Trapolis

11.7.1 Carry out cab visual inspections and full inspection tests as previously described in the work instruction *X'Trapolis Post Maintenance Preparation.*

11.7.2 Brake Test

- Conduct a brake test as per the work instruction *X'Trapolis Brake Controller Tests*

11.7.3 Safety Apparatus Tests

- Conduct an Emergency Stop Button Test as per the work instruction *X'Trapolis Safety Apparatus Tests*
- Conduct a Hand & Foot Pilot Valve Test as per the work instruction *X'Trapolis Safety Apparatus Tests*
- Conduct an Emergency Auto Vigilance By-pass Test as per the work instruction *X'Trapolis Safety Apparatus Tests*
- Conduct a Full Trip test as per the work instruction *X'Trapolis Safety Apparatus Tests*
- Conduct a Safety Loop Test as per the work instruction *X'Trapolis Safety Apparatus Tests*
- Conduct a VICERS Test as per the work instruction *X'Trapolis Safety Apparatus Tests*

12. Failure of the Electrical Doors to Close after the Divide

- Carry out the procedure *Multi-function Coupler Incorrectly Uncoupling*

13. Train Fails to Divide

- Contact the Train Controller and advise of the situation

NOTE: Coupler failures or centre motor defects must be reported as per the FMP

14. Records and Enquiry

Item	Retained by	Period of Retention
Development Folder	Train Driver Standards Officer	3 years
Obsolete master copies	Train Driver Standards Officer	6 years
Distribution lists	Train Driver Standards Officer	3 years

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15. Related Documents

- Electric Train Drivers Roster Book
- Stabling Suburban Electric Trains
- L1-SWS-PRO-012 Train Drivers and/or Fleet Maintenance Staff Entering the Track/Pit at any Location with Adjacent Running Lines
- L3-TSD-PRO 017 Cab Unattended Procedure
- L3-TSD-PRO-007 Multi-function Coupler Incorrectly Uncoupling
- L3-TSD-WOI-001 Changing Ends
- L3-TSD-WOI-025 Comeng Safety Apparatus Tests
- L3-TSD-WOI-026 Comeng Brake Controller Tests
- L3-TSD-WOI-027 Comeng Post Maintenance Preparation
- L3-TSD-WOI-028 Hitachi Brake Controller Tests
- L3-TSD-WOI-029 Hitachi Safety Apparatus Tests
- L3-TSD-WOI-031 Hitachi Post Maintenance Preparation
- L3-TSD-WOI-032 Siemens Brake Controller Tests
- L3-TSD-WOI-033 Siemens Safety Apparatus Tests
- L3-TSD-WOI-034 Siemens Post Maintenance Preparation
- L3-TSD-WOI-036 X'Trapolis Brake Controller Tests
- L3-TSD-WOI-037 X'Trapolis Safety Apparatus Tests
- L3-TSD-WOI-038 X'Trapolis Post Maintenance Preparation

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